BEST AVAILABLE COPY

FIG.1

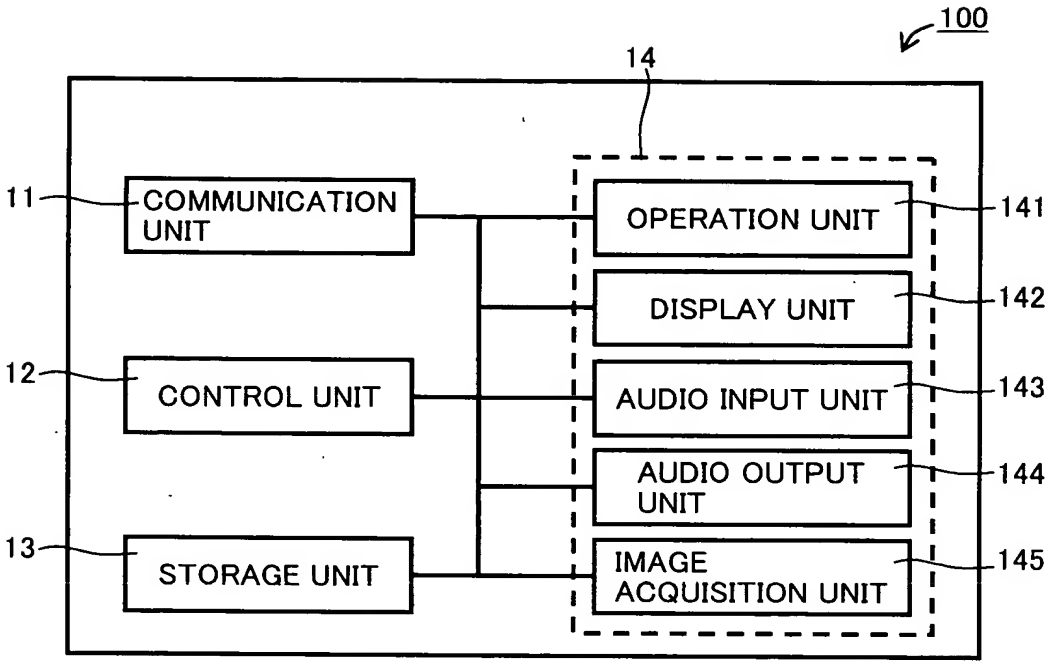


FIG.2

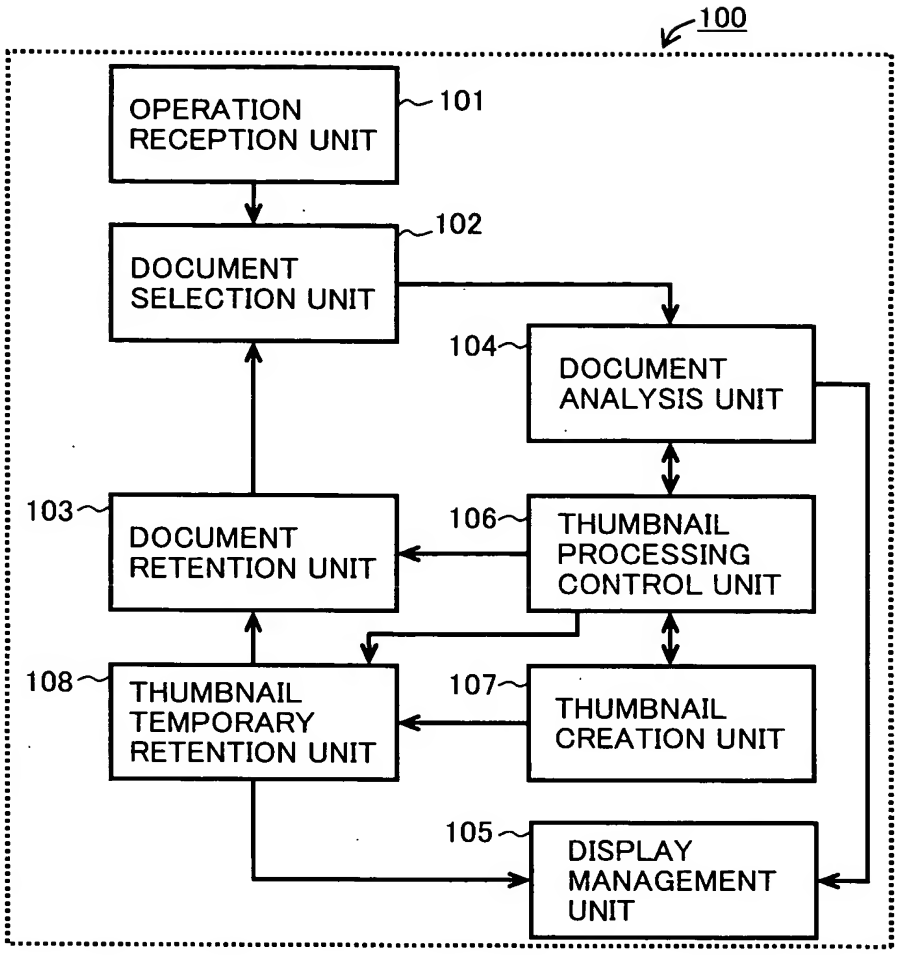

100
OPERATION RECEPTION UNIT
101
DOCUMENT SELECTION UNIT
102
DOCUMENT ANALYSIS UNIT
104
DOCUMENT RETENTION UNIT
103
THUMBNAIL PROCESSING CONTROL UNIT
106
THUMBNAIL TEMPORARY RETENTION UNIT
108
THUMBNAIL CREATION UNIT
107
DISPLAY MANAGEMENT UNIT
105

FIG.3

TYPE	INTEGER	CHARACTER STRING	CHARACTER STRING	CHARACTER STRING	CHARACTER STRING	CHARACTER STRING	INTEGER	POINTER TO attach_data TYPE
FIELD NAME	time	from	to[]	cc[]	subject	msg_text	msg_size	attach_data
NOTES	TRANSMISION DATE AND TIME OR RETENTION DATE AND TIME	SENDER ADDRESS	ADDRESS DESIGNATED IN To (MULTIPLE ALLOWED)	ADDRESS DESIGNATED IN Cc (MULTIPLE ALLOWED)	SUBJECT	MESSAGE TEXT	MAIL TOTAL VOLUME (Byte)	ATTACHMENT FILE

FIG.4

TYPE	CHARACTER STRING	CHARACTER STRING	INTEGER	INTEGER	INTEGER	POINTER TO thumb_data TYPE
FIELD NAME	name	type	time	size	address	thumb_data
NOTES	ATTACHMENT FILE NAME	FILE TYPE (mime/type)	CREATION DATE AND TIME	FILE SIZE (Byte)	DATA ENTITY TOP ADDRESS	POINTER TO THUMBNAIL DATA STRUCTURE

FIG.5

TYPE	INTEGER	INTEGER	INTEGER	INTEGER	INTEGER	INTEGER	INTEGER	INTEGER
FIELD NAME	complete	status	size	address	time	lastacc ess	count	priority
NOTES	CLASSIFICATION OF OBTAINABLE DATA -1: NONE 0: COMPLETED 1: INTERMEDIATE DATA	CREATION PROCESSING STATUS 0: PROCESS COMPLETED/ TERMINATED 1: PROCESS IN PROGRESS	DATA SIZE (Byte)	DATA ENTITY TOP ADDRESS	CREATION DATE AND TIME	FINAL ACCESS DATE AND TIME	ACCESS COUNT	DEGREE OF IMPORTANCE

FIG.6

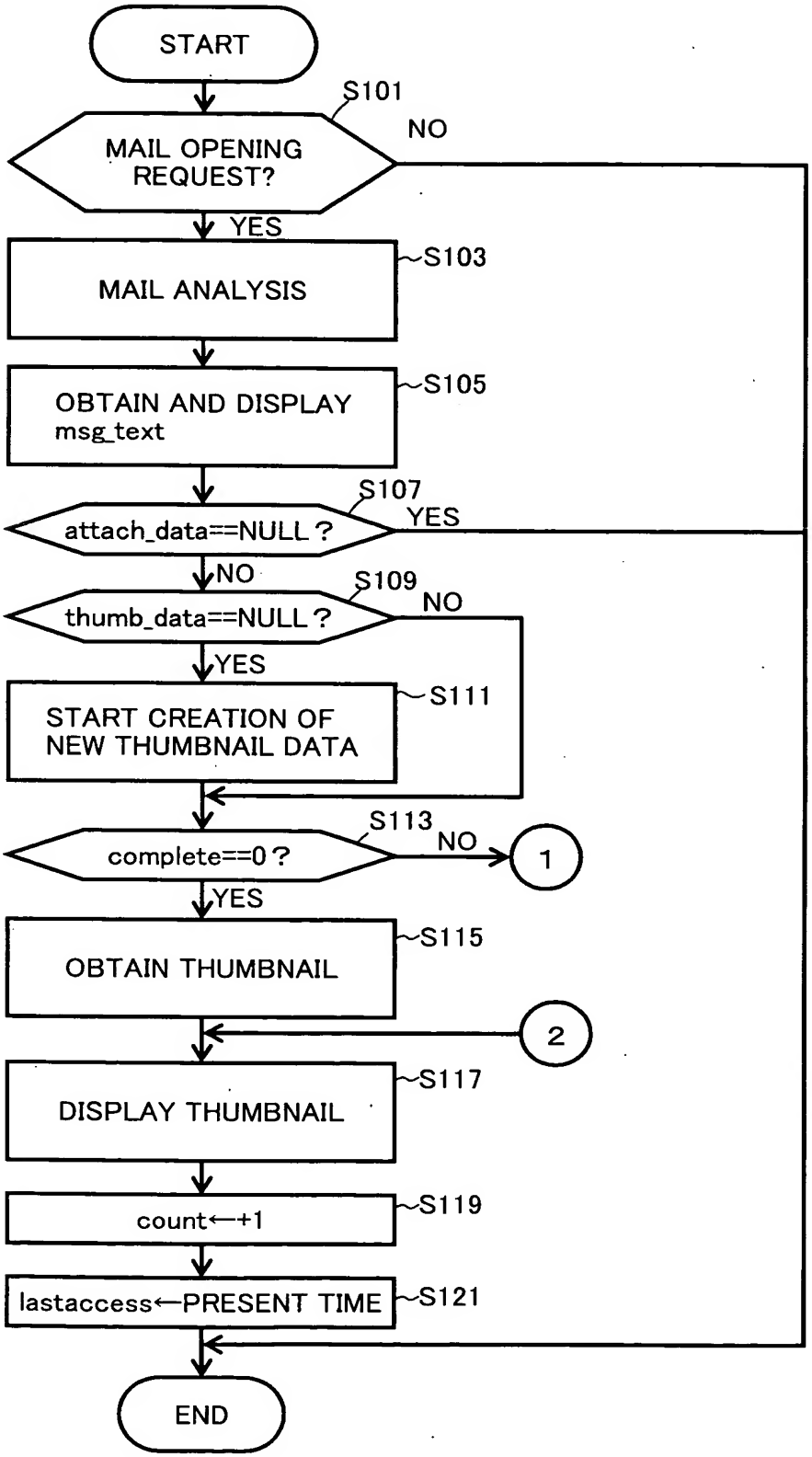

START
S101
MAIL OPENING REQUEST?
NO
YES
MAIL ANALYSIS
S103
OBTAIN AND DISPLAY msg_text
S105
S107
attach_data==NULL?
YES
NO
S109
thumb_data==NULL?
NO
YES
START CREATION OF NEW THUMBNAIL DATA
S111
S113
complete==0?
NO
1
YES
OBTAIN THUMBNAIL
S115
2
DISPLAY THUMBNAIL
S117
count←+1
S119
lastaccess←PRESENT TIME
S121
END

FIG.7

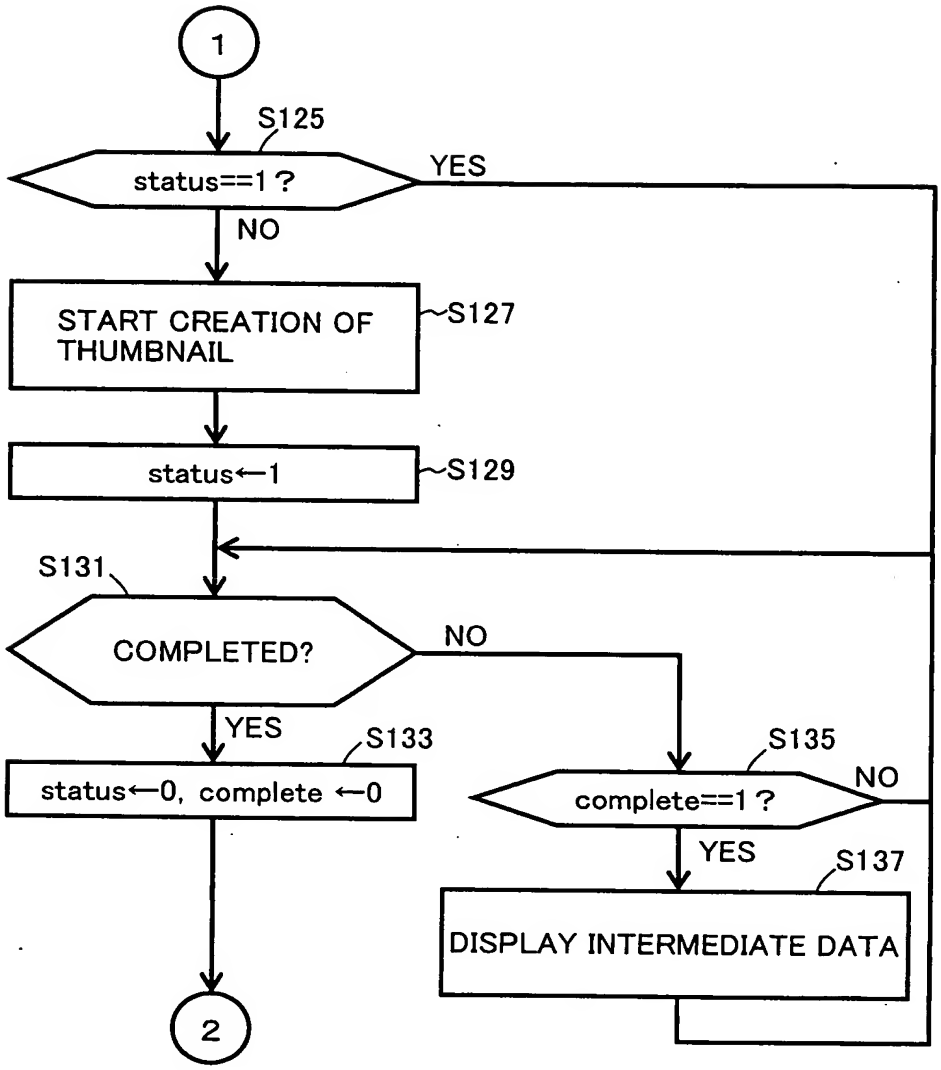

1
S125
status==1 ?
YES
NO
START CREATION OF THUMBNAIL
S127
status←1
S129
S131
COMPLETED?
NO
YES
S133
status←0, complete ←0
S135
complete==1 ?
NO
YES
S137
DISPLAY INTERMEDIATE DATA
2

FIG.8

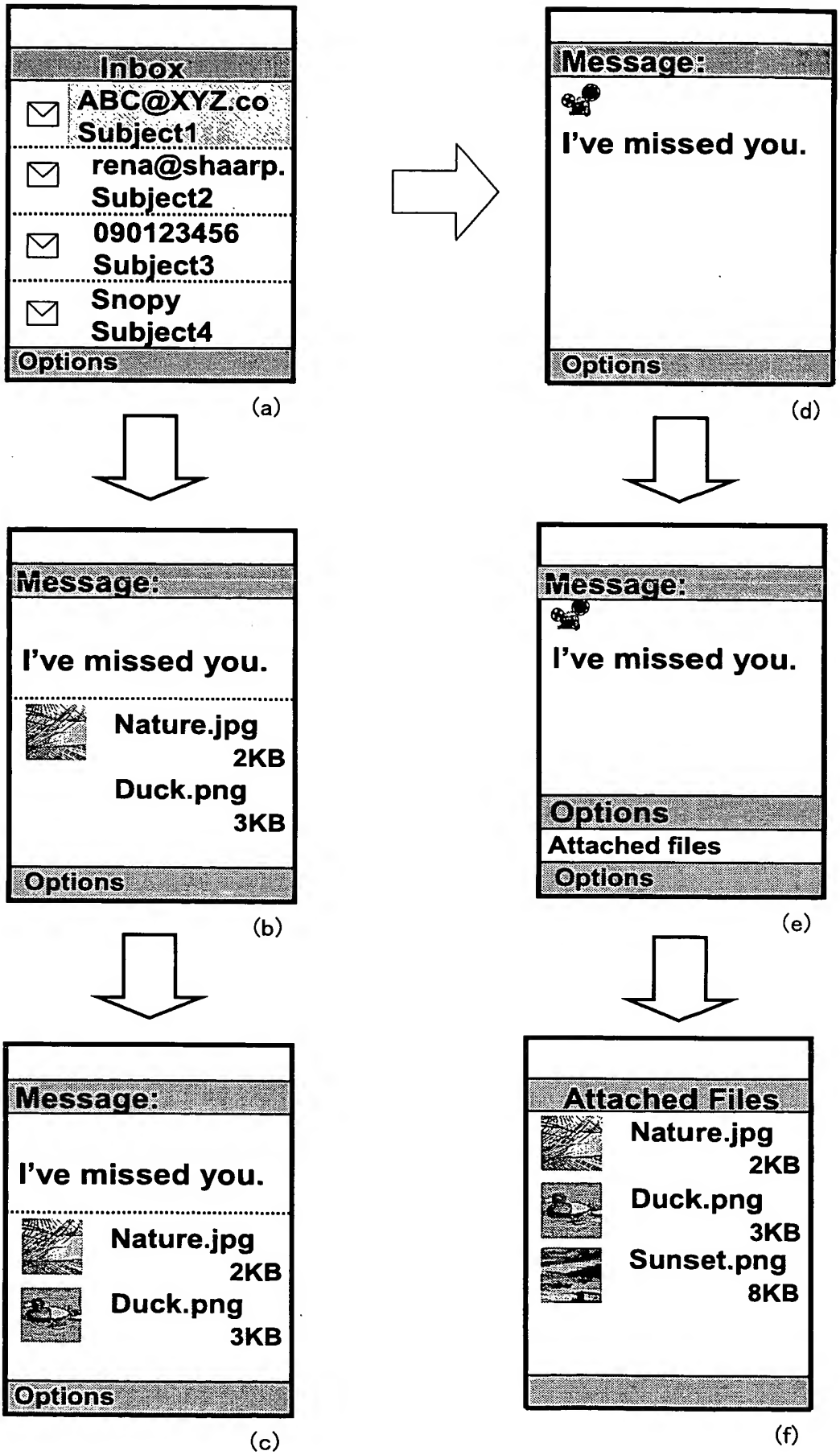

Inbox
ABC@XYZ.co
Subject1
rena@shaarp.
Subject2
090123456
Subject3
Snopy
Subject4
Options
(a)
Message:
I've missed you.
Nature.jpg
2KB
Duck.png
3KB
Options
(b)
Message:
I've missed you.
Nature.jpg
2KB
Duck.png
3KB
Options
(c)
Message:
I've missed you.
Options
(d)
Message:
I've missed you.
Options
Attached files
Options
(e)
Attached Files
Nature.jpg
2KB
Duck.png
3KB
Sunset.png
8KB
(f)

FIG.9

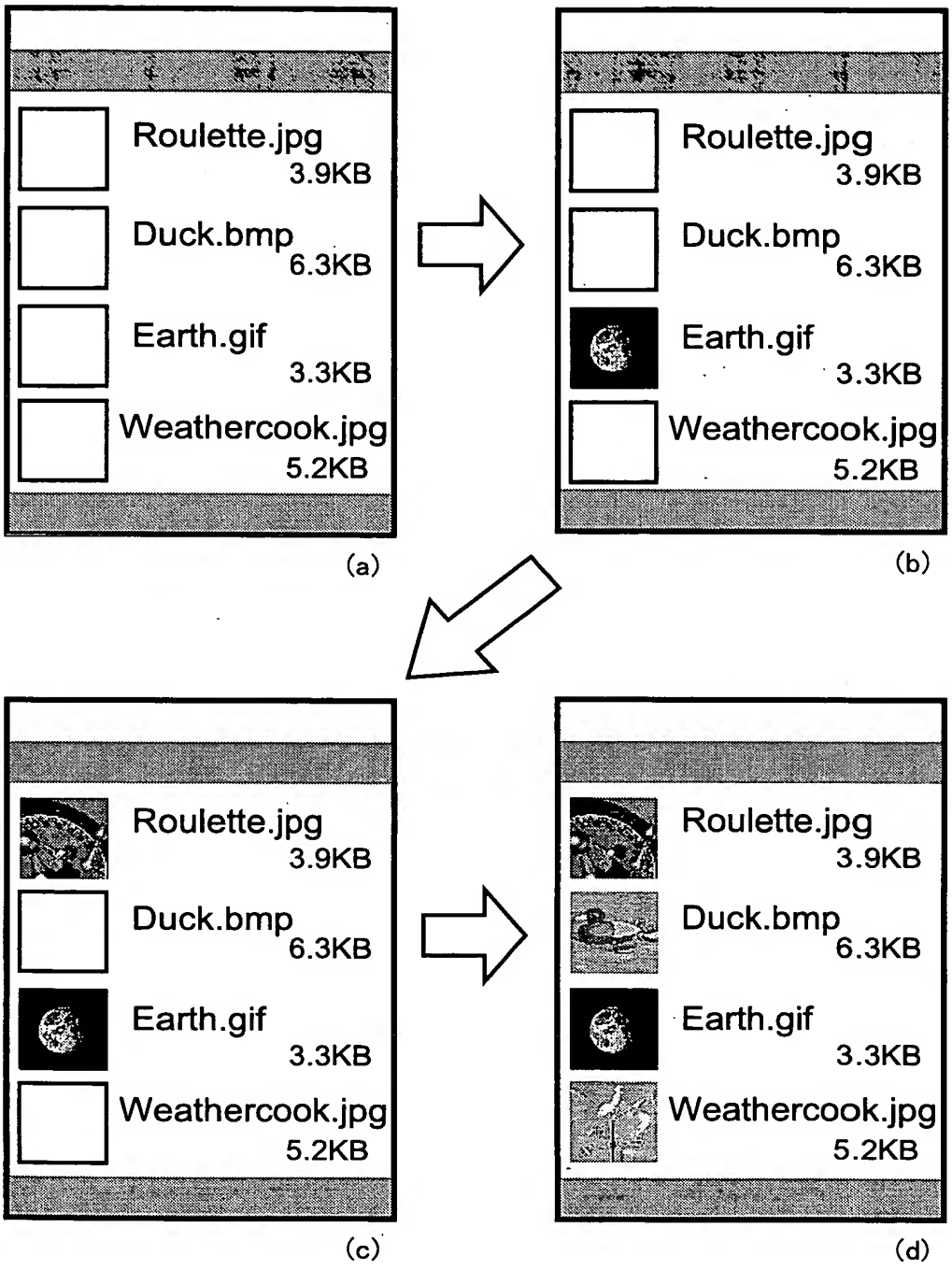

Roulette.jpg
3.9KB
Duck.bmp
6.3KB
Earth.gif
3.3KB
Weathercook.jpg
5.2KB
(a)
Roulette.jpg
3.9KB
Duck.bmp
6.3KB
Earth.gif
3.3KB
Weathercook.jpg
5.2KB
(b)
Roulette.jpg
3.9KB
Duck.bmp
6.3KB
Earth.gif
3.3KB
Weathercook.jpg
5.2KB
(c)
Roulette.jpg
3.9KB
Duck.bmp
6.3KB
Earth.gif
3.3KB
Weathercook.jpg
5.2KB
(d)

FIG.10

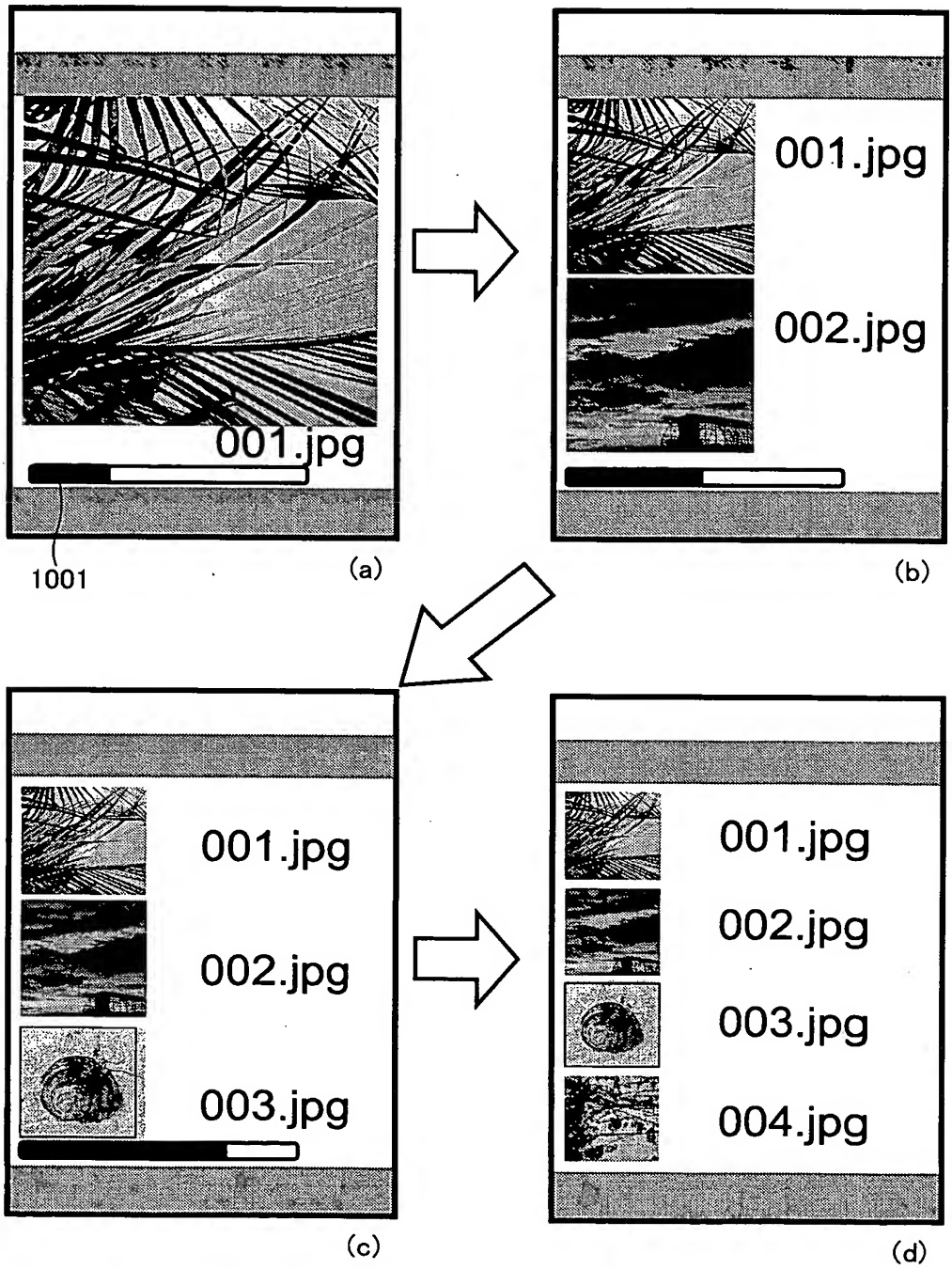

001.jpg
1001
(a)
001.jpg
002.jpg
(b)
001.jpg
002.jpg
003.jpg
(c)
001.jpg
002.jpg
003.jpg
004.jpg
(d)

FIG.11

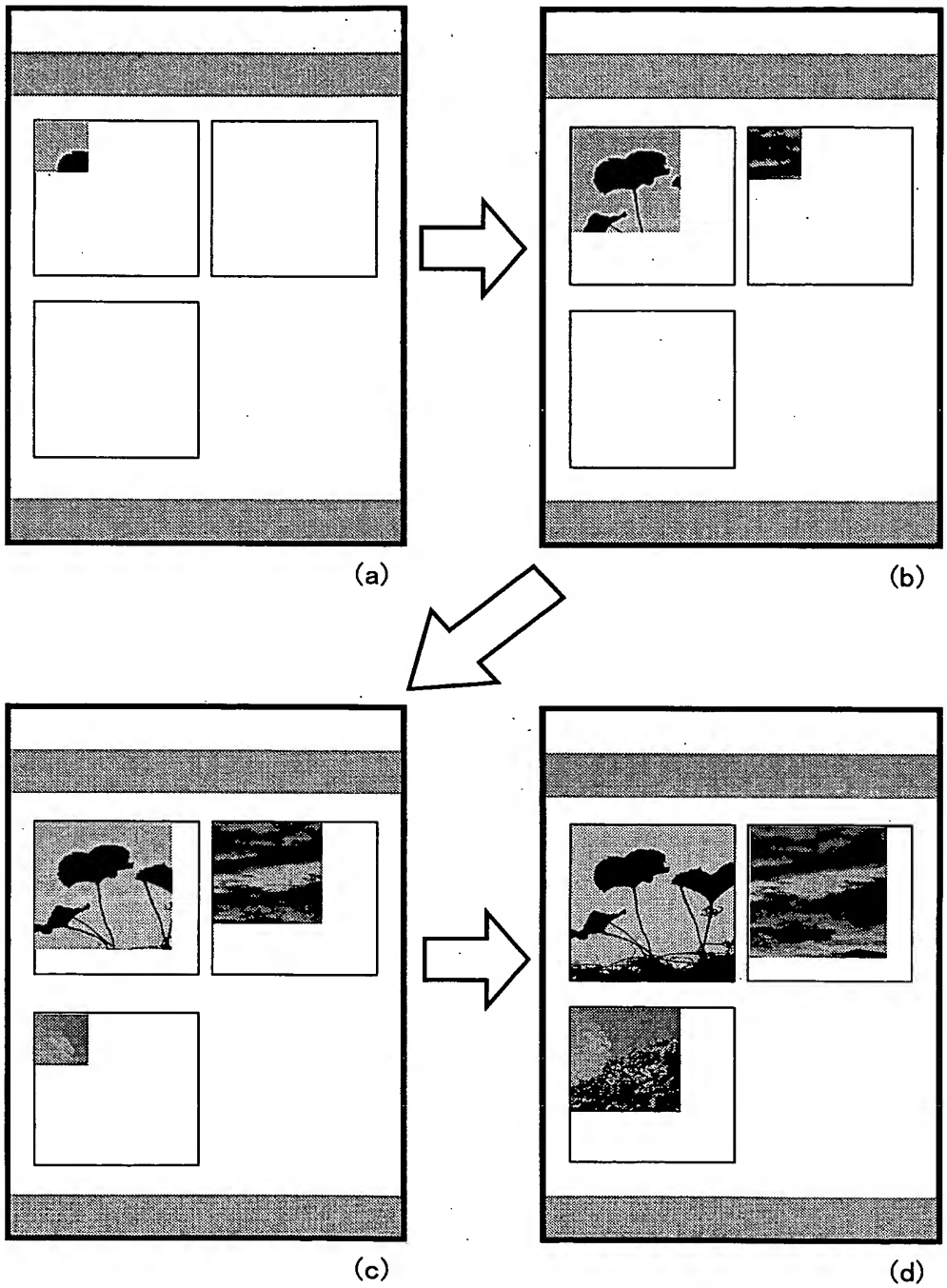


FIG.12

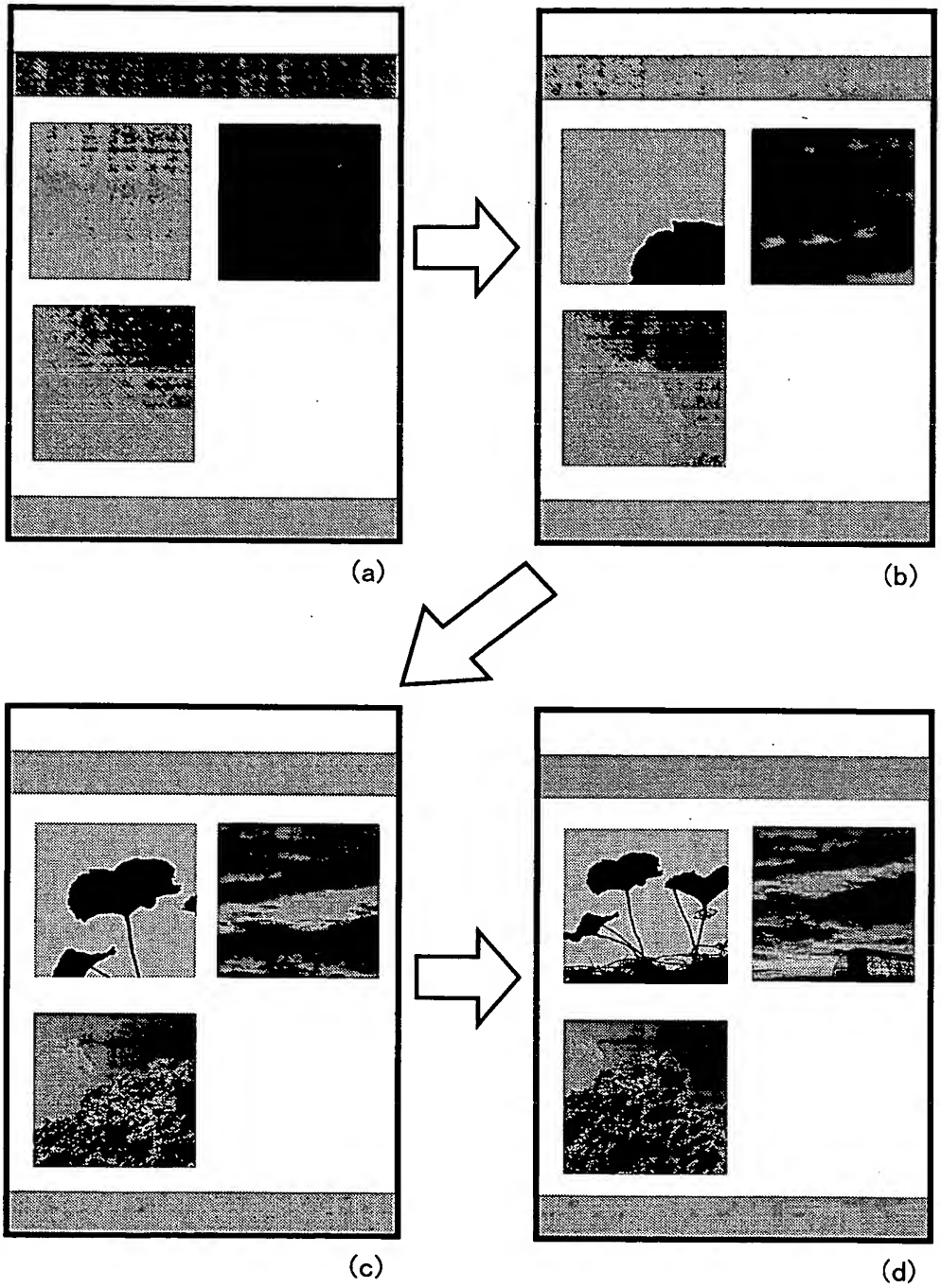


FIG.13

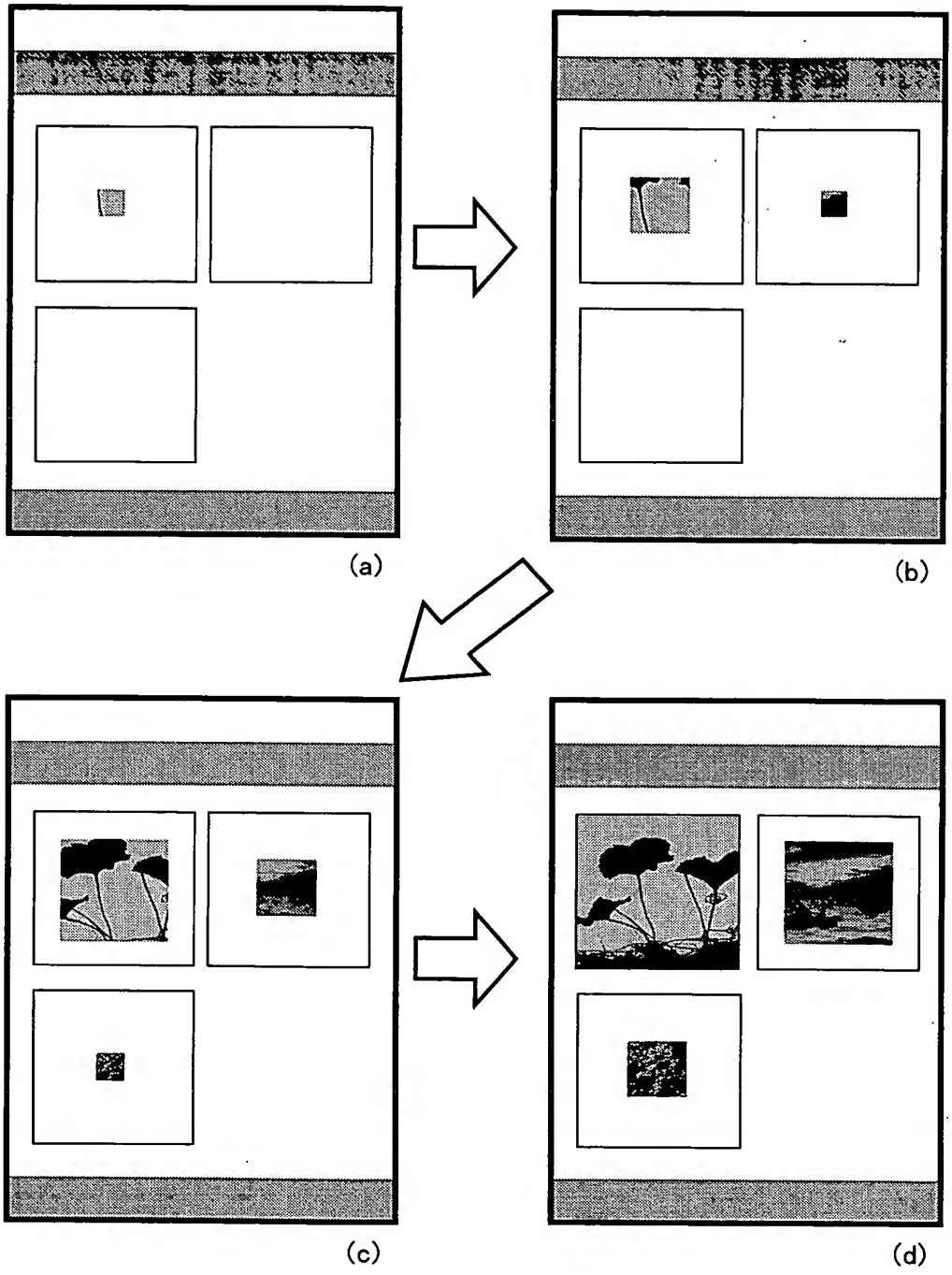


FIG.14

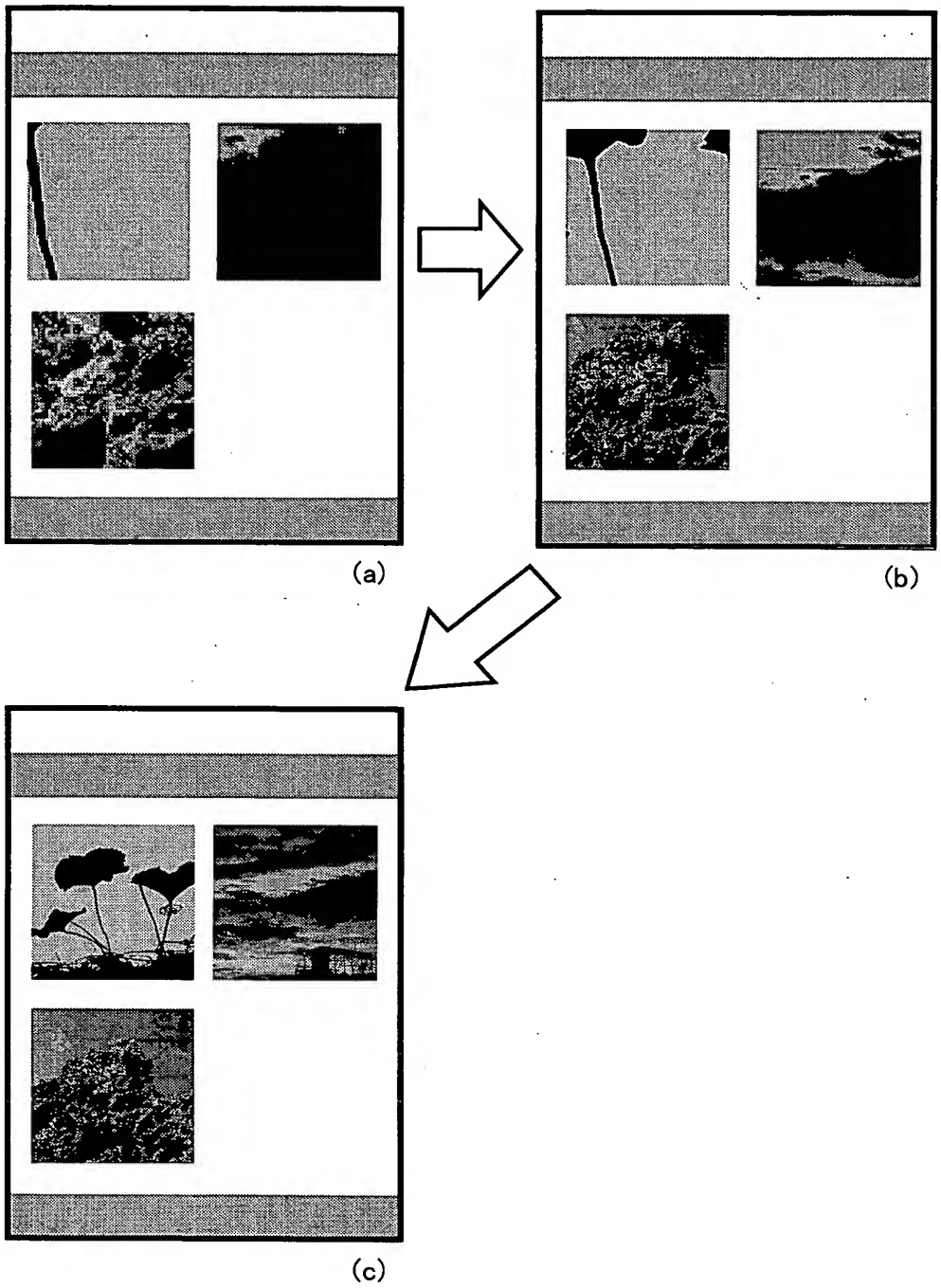


FIG.15

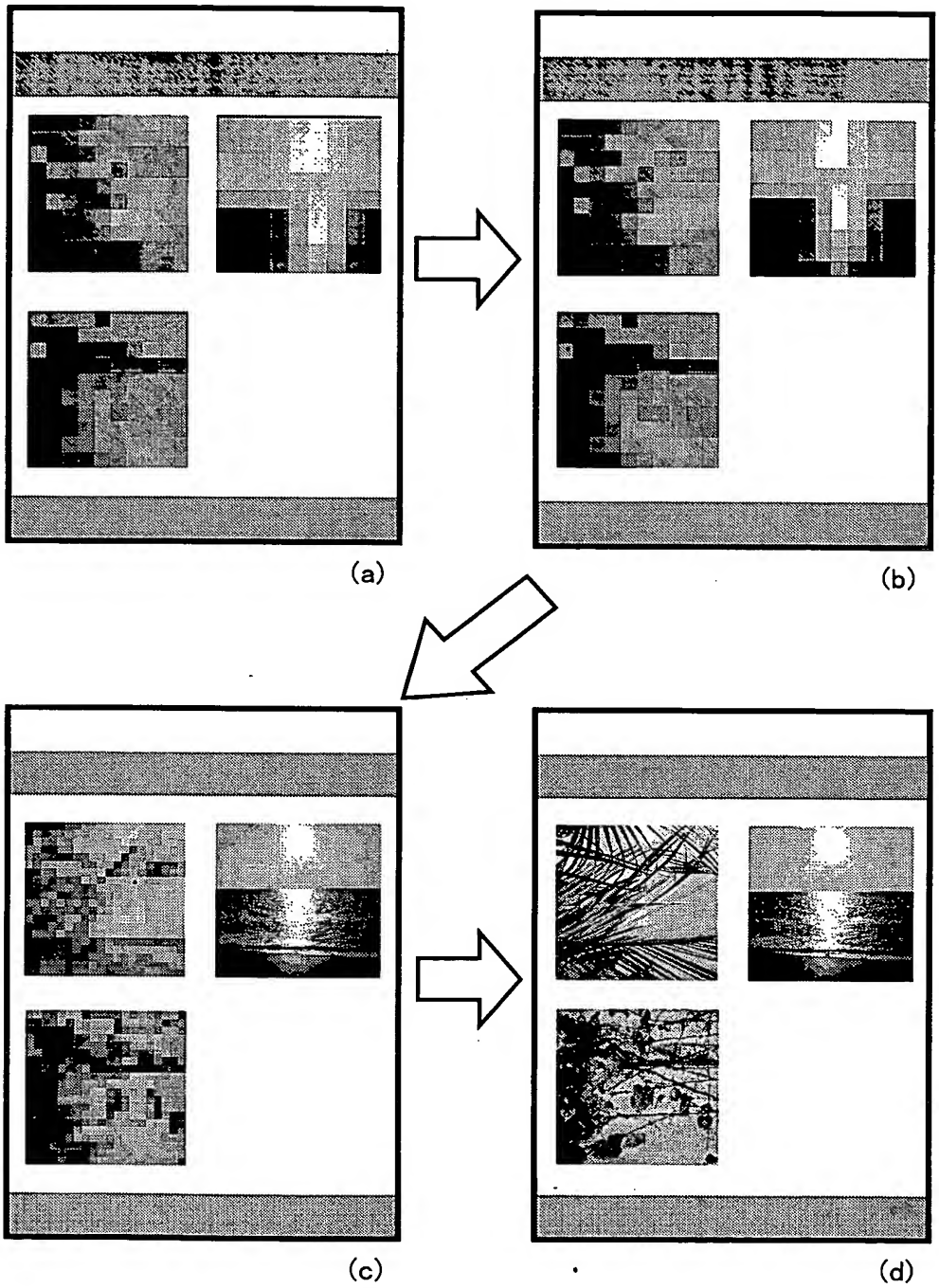


FIG.16

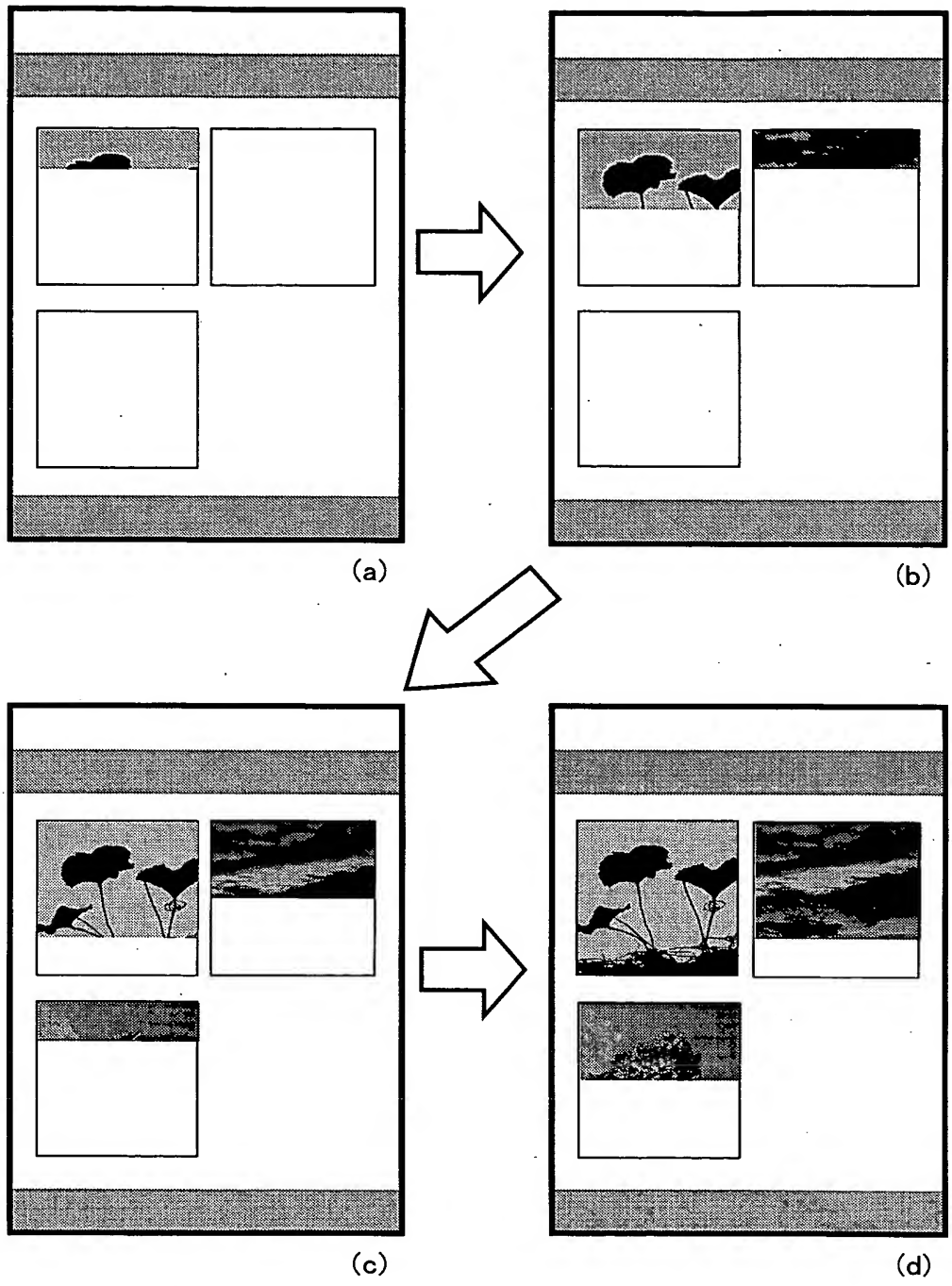


FIG.17

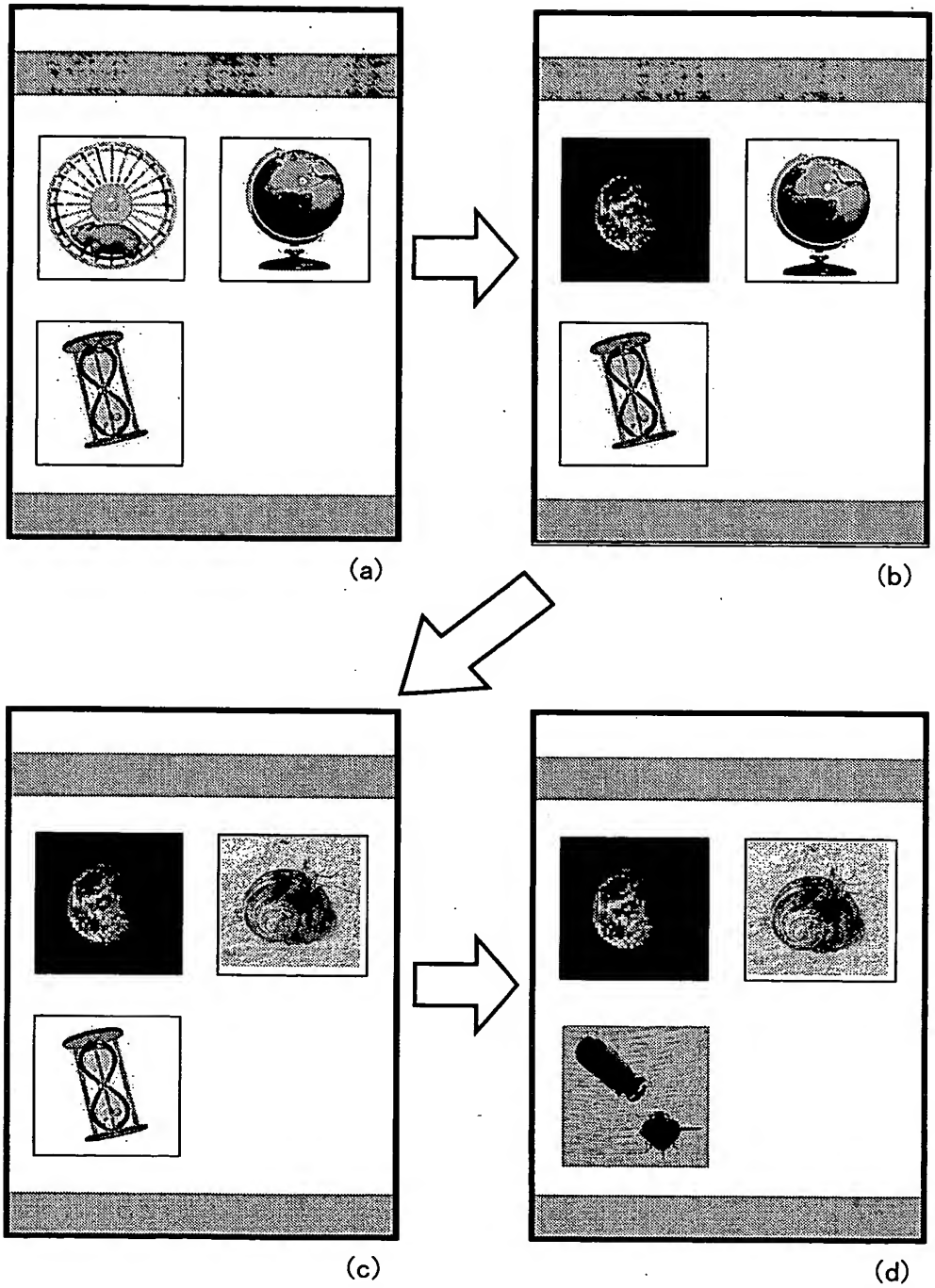


FIG.18

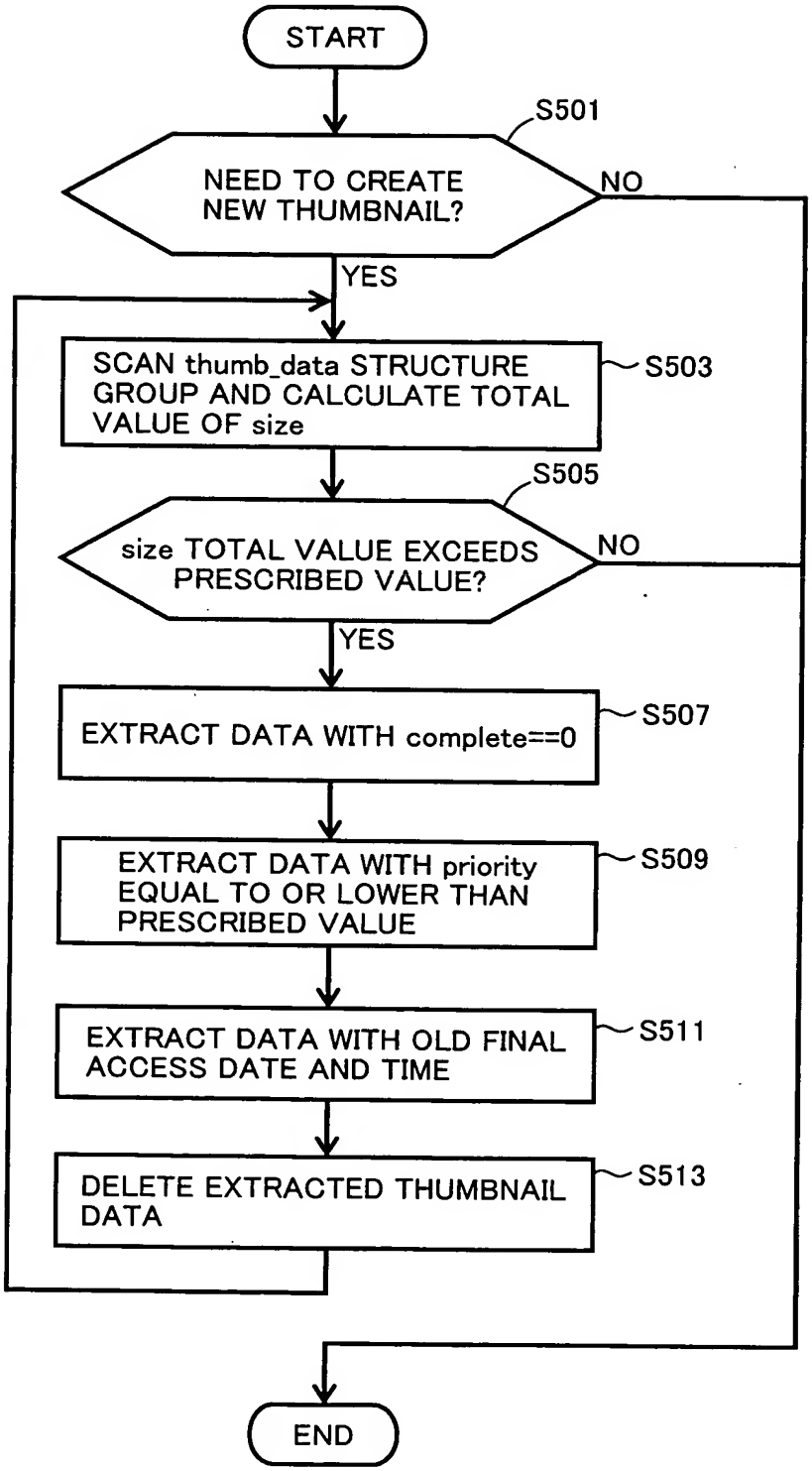

START
S501
NEED TO CREATE NEW THUMBNAIL?
NO
YES
SCAN thumb_data STRUCTURE GROUP AND CALCULATE TOTAL VALUE OF size
S503
S505
size TOTAL VALUE EXCEEDS PRESCRIBED VALUE?
NO
YES
EXTRACT DATA WITH complete==0
S507
EXTRACT DATA WITH priority EQUAL TO OR LOWER THAN PRESCRIBED VALUE
S509
EXTRACT DATA WITH OLD FINAL ACCESS DATE AND TIME
S511
DELETE EXTRACTED THUMBNAIL DATA
S513
END

FIG.19

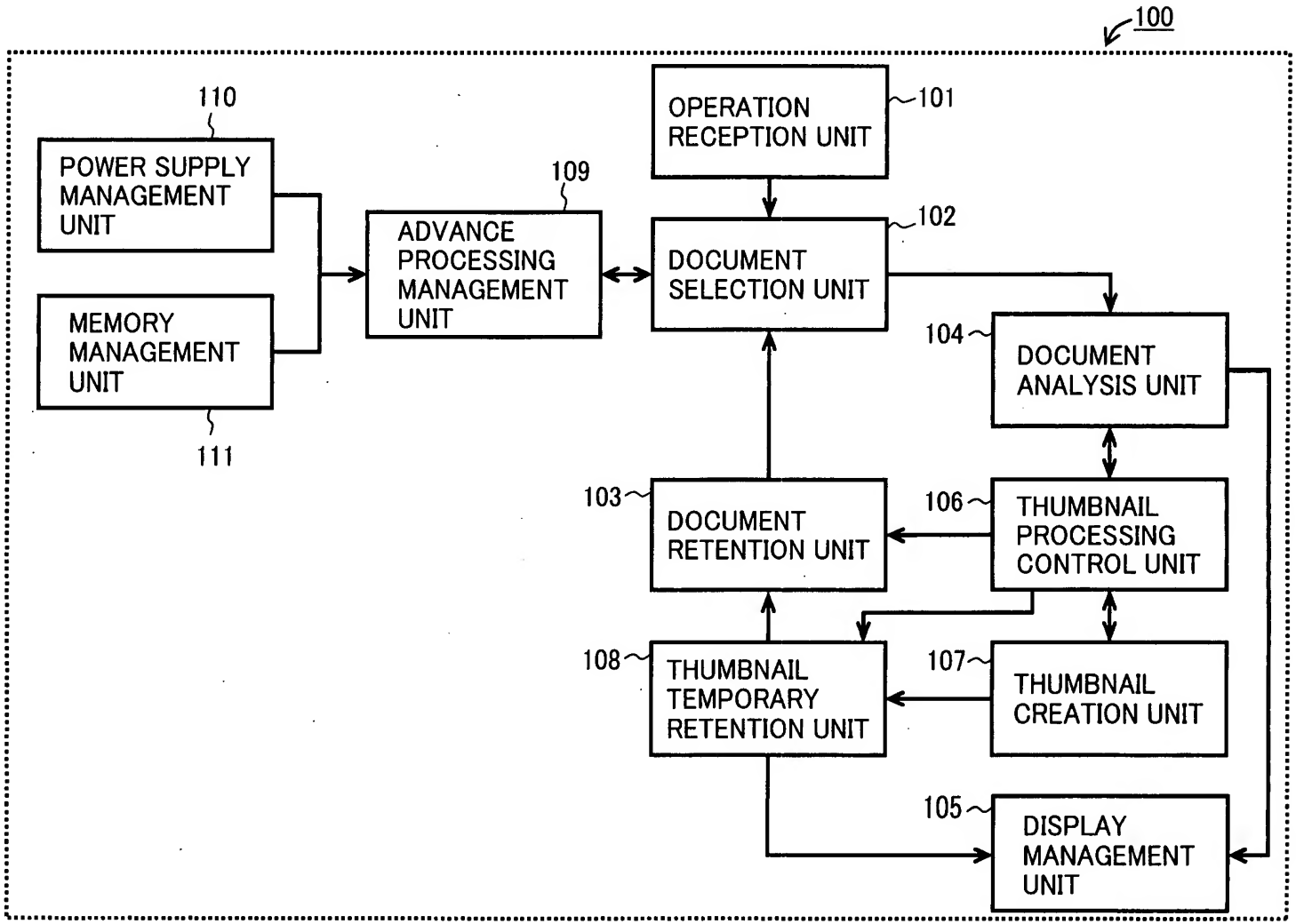

100
110
POWER SUPPLY MANAGEMENT UNIT
MEMORY MANAGEMENT UNIT
111
109
ADVANCE PROCESSING MANAGEMENT UNIT
OPERATION RECEPTION UNIT
101
102
DOCUMENT SELECTION UNIT
104
DOCUMENT ANALYSIS UNIT
103
DOCUMENT RETENTION UNIT
106
THUMBNAIL PROCESSING CONTROL UNIT
108
THUMBNAIL TEMPORARY RETENTION UNIT
107
THUMBNAIL CREATION UNIT
105
DISPLAY MANAGEMENT UNIT

FIG.20

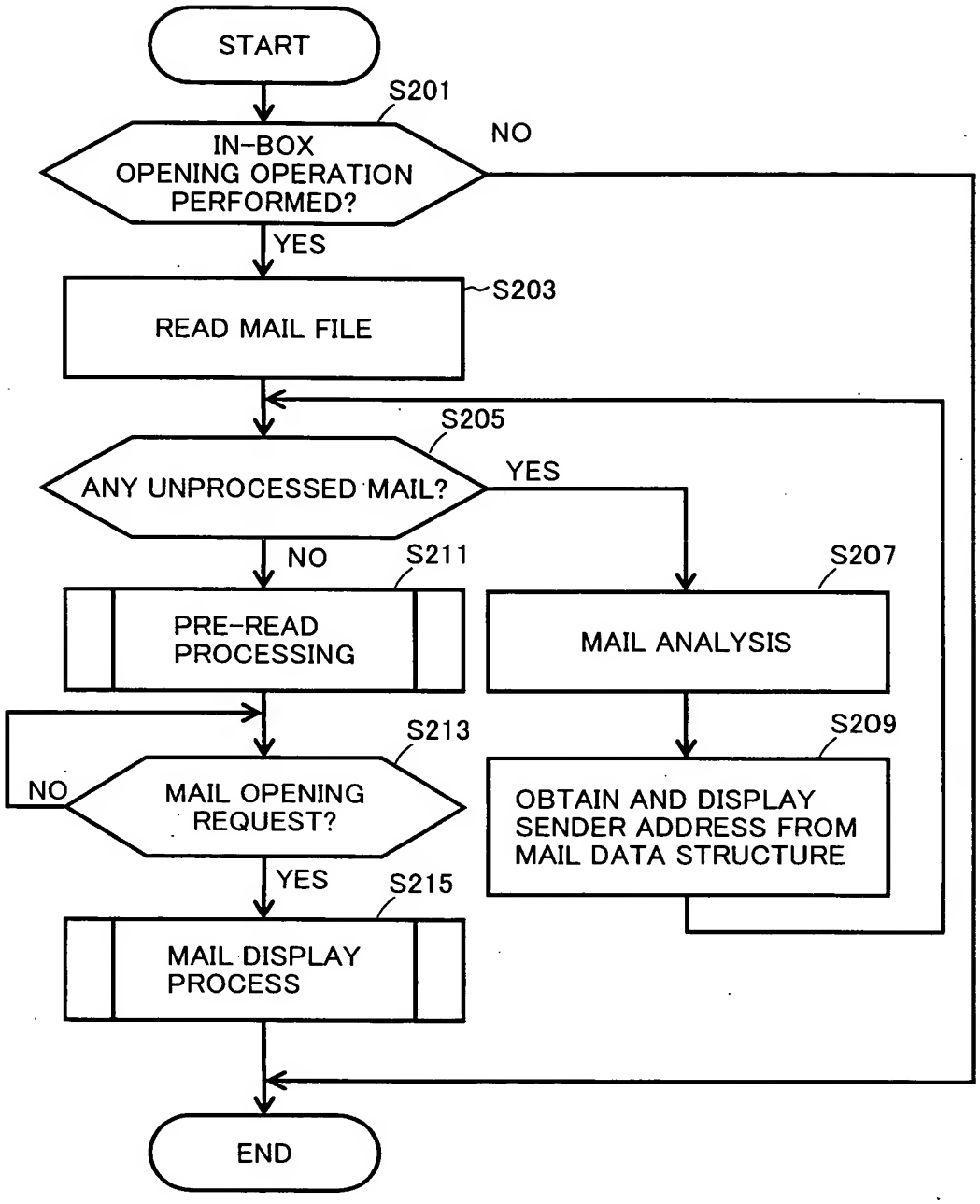

START
S201
IN-BOX OPENING OPERATION PERFORMED?
NO
YES
S203
READ MAIL FILE
S205
ANY UNPROCESSED MAIL?
YES
NO
S211
PRE-READ PROCESSING
S207
MAIL ANALYSIS
S213
NO
MAIL OPENING REQUEST?
S209
OBTAIN AND DISPLAY SENDER ADDRESS FROM MAIL DATA STRUCTURE
YES
S215
MAIL DISPLAY PROCESS
END

FIG.21

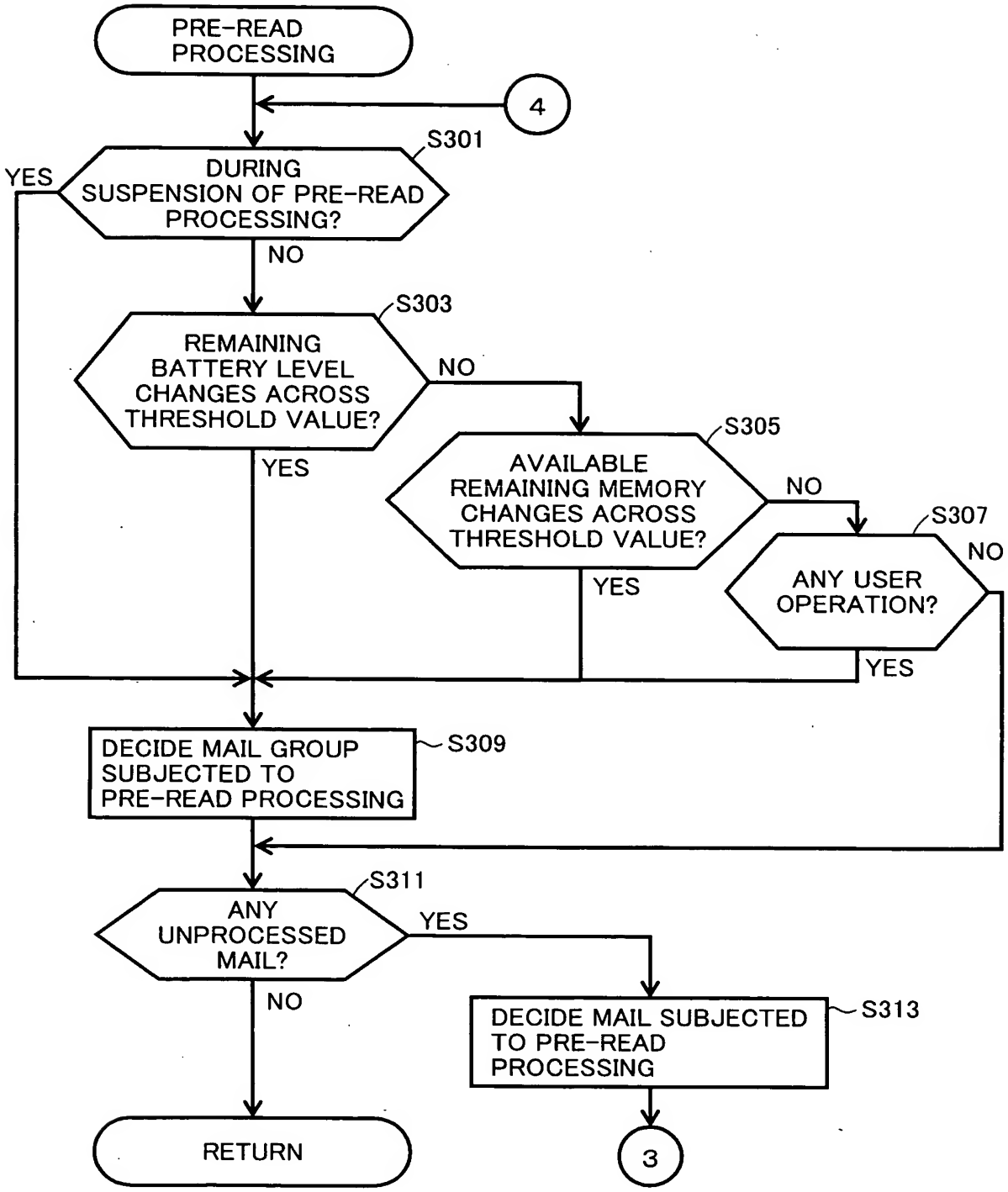

PRE-READ PROCESSING
4
S301
DURING SUSPENSION OF PRE-READ PROCESSING?
YES
NO
S303
REMAINING BATTERY LEVEL CHANGES ACROSS THRESHOLD VALUE?
NO
YES
S305
AVAILABLE REMAINING MEMORY CHANGES ACROSS THRESHOLD VALUE?
NO
YES
S307
ANY USER OPERATION?
NO
YES
DECIDE MAIL GROUP SUBJECTED TO PRE-READ PROCESSING
S309
S311
ANY UNPROCESSED MAIL?
YES
NO
DECIDE MAIL SUBJECTED TO PRE-READ PROCESSING
S313
RETURN
3

FIG.22

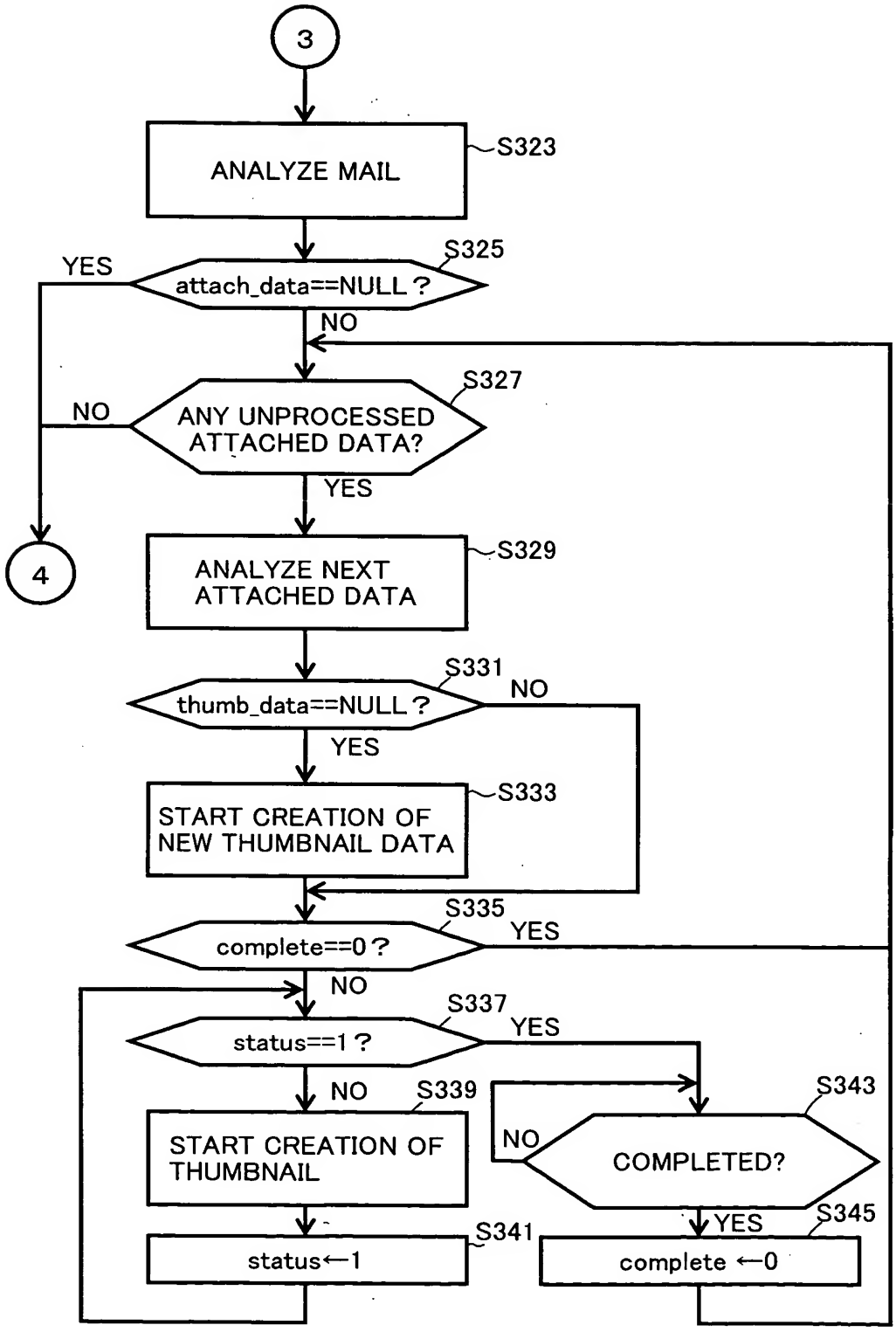
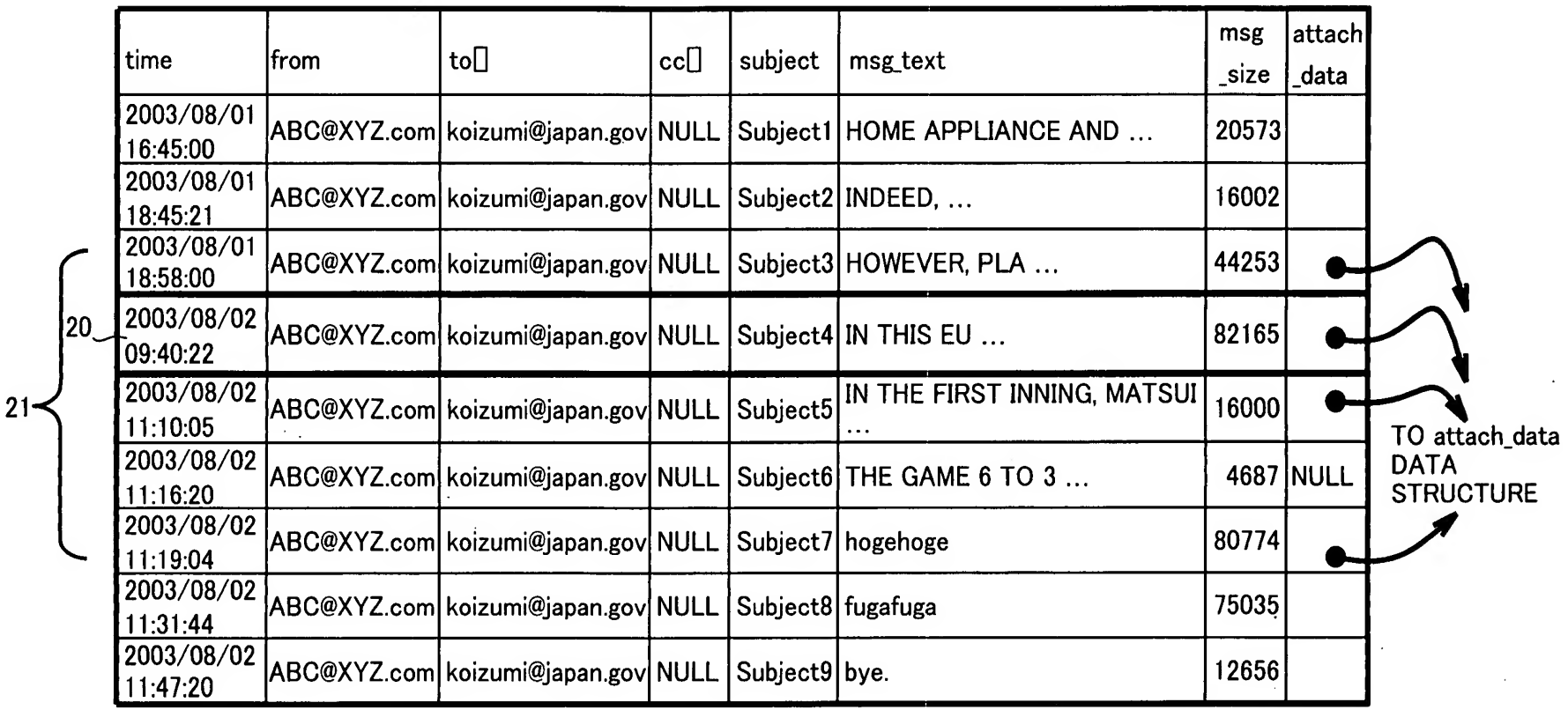

3
ANALYZE MAIL
S323
S325
YES
attach_data==NULL ?
NO
S327
NO
ANY UNPROCESSED ATTACHED DATA?
YES
4
ANALYZE NEXT ATTACHED DATA
S329
S331
NO
thumb_data==NULL ?
YES
START CREATION OF NEW THUMBNAIL DATA
S333
S335
YES
complete==0 ?
NO
S337
YES
status==1 ?
NO
S339
START CREATION OF THUMBNAIL
S341
status←1
S343
NO
COMPLETED?
YES
S345
complete ←0

FIG.23



time	from	to[]	cc[]	subject	msg_text	msg_size	attach_data
2003/08/01 16:45:00	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject1	HOME APPLIANCE AND ...	20573	
2003/08/01 18:45:21	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject2	INDEED, ...	16002	
2003/08/01 18:58:00	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject3	HOWEVER, PLA ...	44253	
2003/08/02 09:40:22	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject4	IN THIS EU ...	82165	
2003/08/02 11:10:05	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject5	IN THE FIRST INNING, MATSUI ...	16000	
2003/08/02 11:16:20	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject6	THE GAME 6 TO 3 ...	4687	NULL
2003/08/02 11:19:04	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject7	hogehoge	80774	
2003/08/02 11:31:44	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject8	fugafuga	75035	
2003/08/02 11:47:20	ABC@XYZ.com	koizumi@japan.gov	NULL	Subject9	bye.	12656	

FIG.24

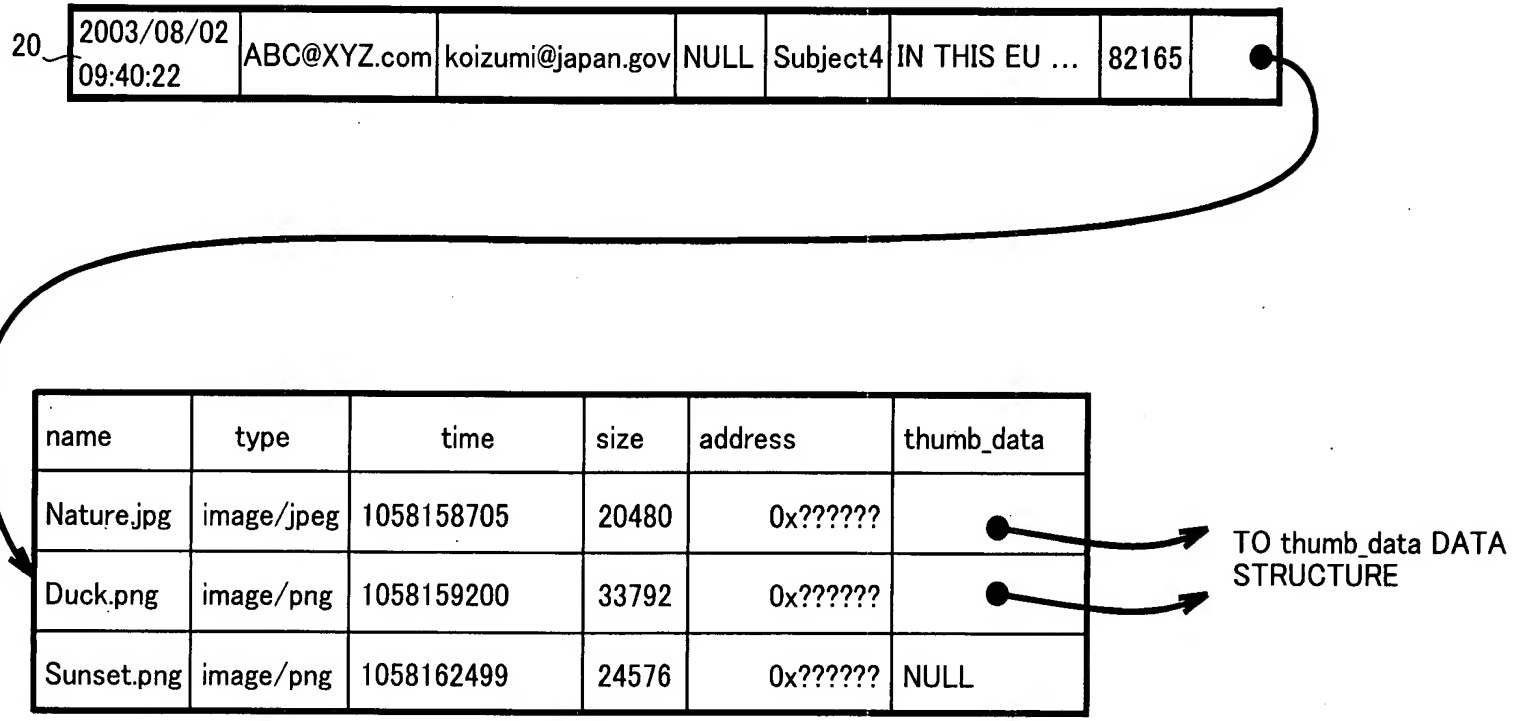

20
2003/08/02 09:40:22
ABC@XYZ.com
koizumi@japan.gov
NULL
Subject4
IN THIS EU ...
82165
name
type
time
size
address
thumb_data
Nature.jpg
image/jpeg
1058158705
20480
0x??????
Duck.png
image/png
1058159200
33792
0x??????
Sunset.png
image/png
1058162499
24576
0x??????
NULL
TO thumb_data DATA STRUCTURE

FIG.25

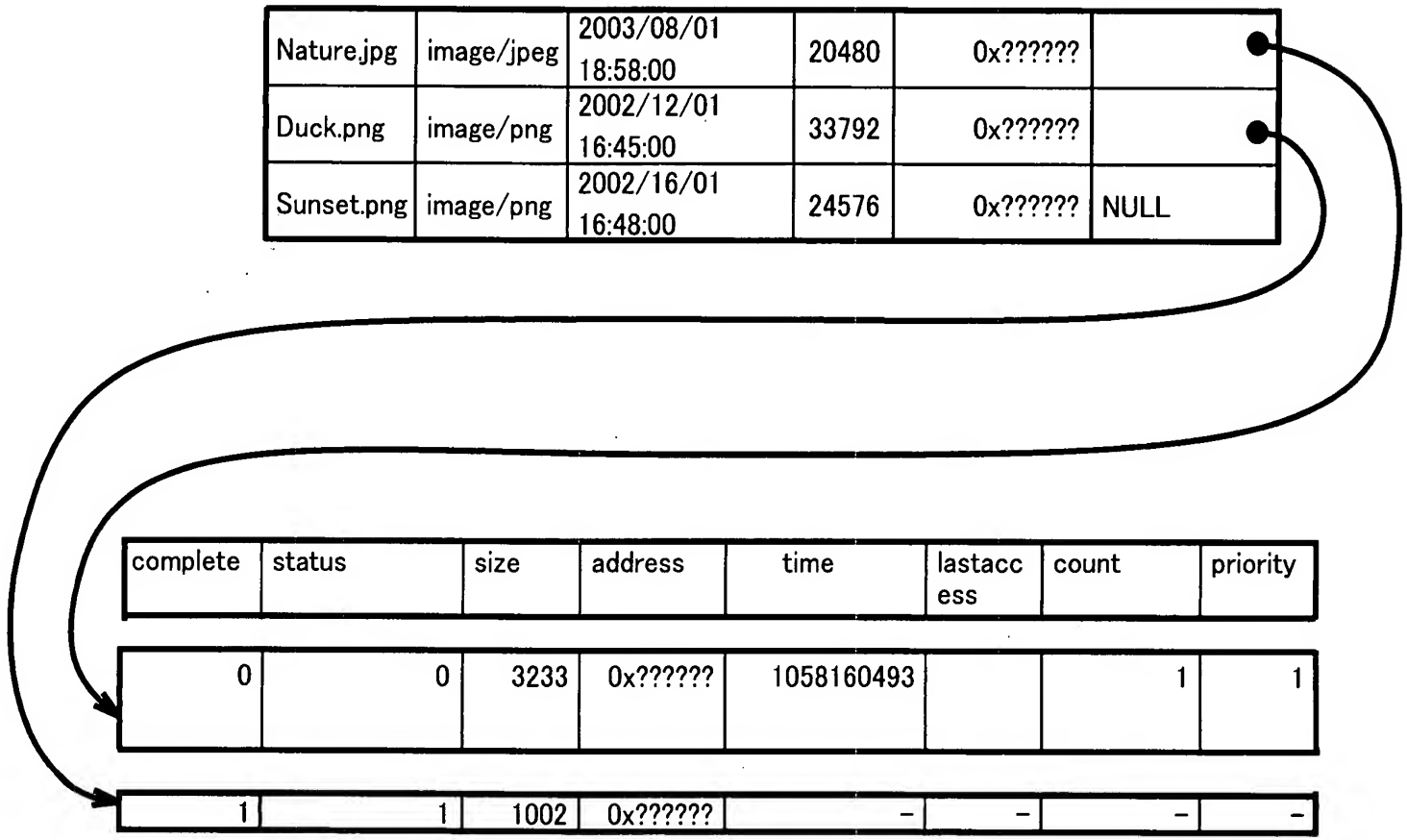

Nature.jpg
image/jpeg
2003/08/01 18:58:00
20480
0x??????
Duck.png
image/png
2002/12/01 16:45:00
33792
0x??????
Sunset.png
image/png
2002/16/01 16:48:00
24576
0x??????
NULL
complete
status
size
address
time
lastaccess
count
priority
0
0
3233
0x??????
1058160493
1
1
1
1
1002
0x??????
-
-
-
-

FIG.26

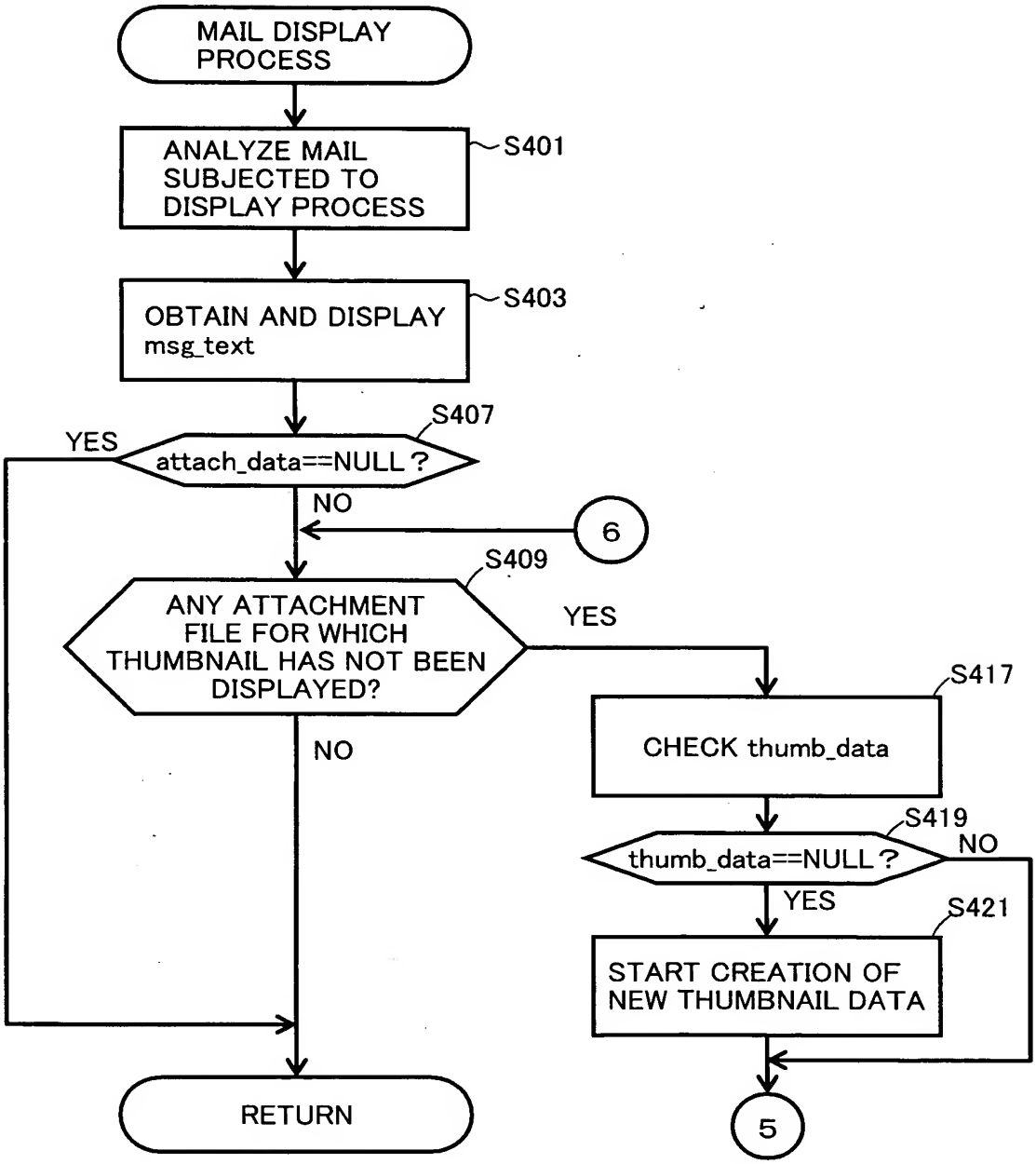

MAIL DISPLAY PROCESS
ANALYZE MAIL SUBJECTED TO DISPLAY PROCESS
S401
OBTAIN AND DISPLAY msg_text
S403
S407
YES
attach_data==NULL?
NO
6
S409
ANY ATTACHMENT FILE FOR WHICH THUMBNAIL HAS NOT BEEN DISPLAYED?
YES
NO
S417
CHECK thumb_data
S419
thumb_data==NULL?
NO
YES
S421
START CREATION OF NEW THUMBNAIL DATA
RETURN
5

FIG.27

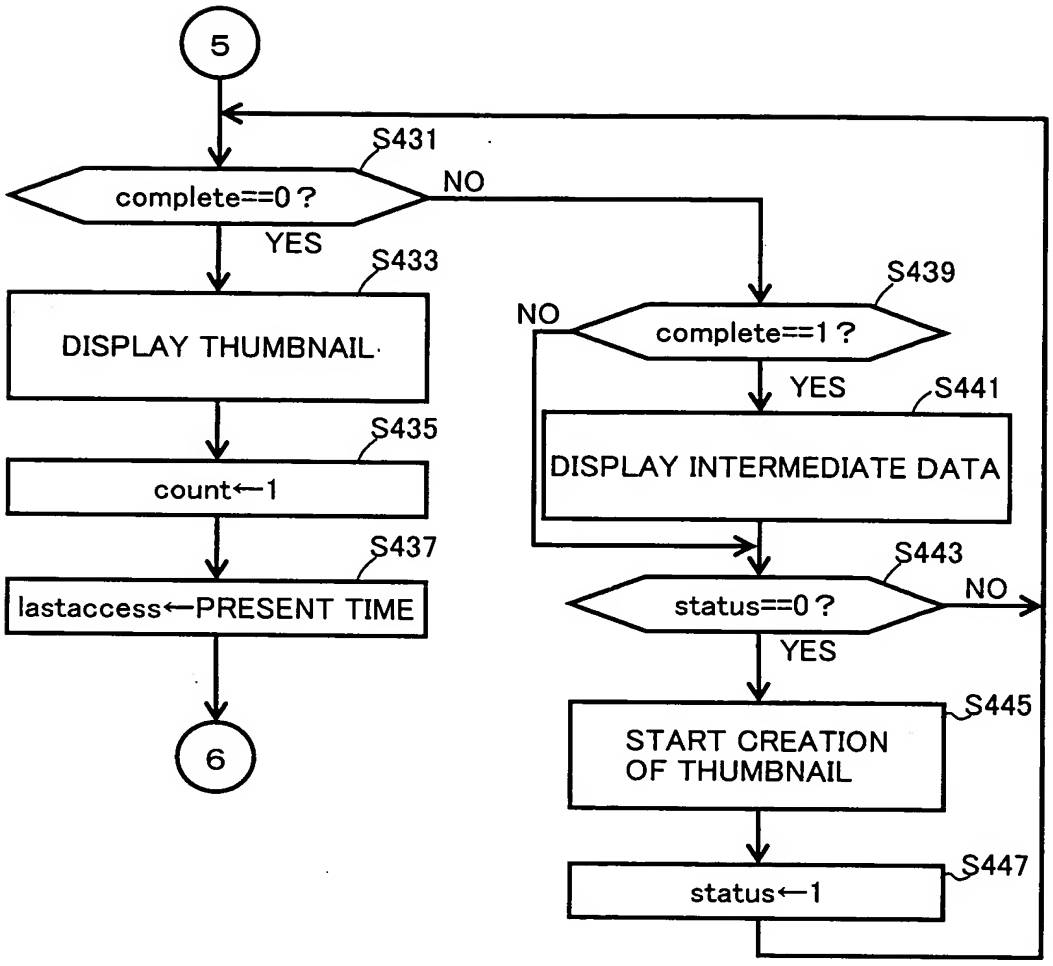

5
S431
complete==0?
NO
YES
S433
DISPLAY THUMBNAIL
S435
count←1
S437
lastaccess←PRESENT TIME
6
S439
NO
complete==1?
YES
S441
DISPLAY INTERMEDIATE DATA
S443
status==0?
NO
YES
S445
START CREATION OF THUMBNAIL
S447
status←1

FIG.28

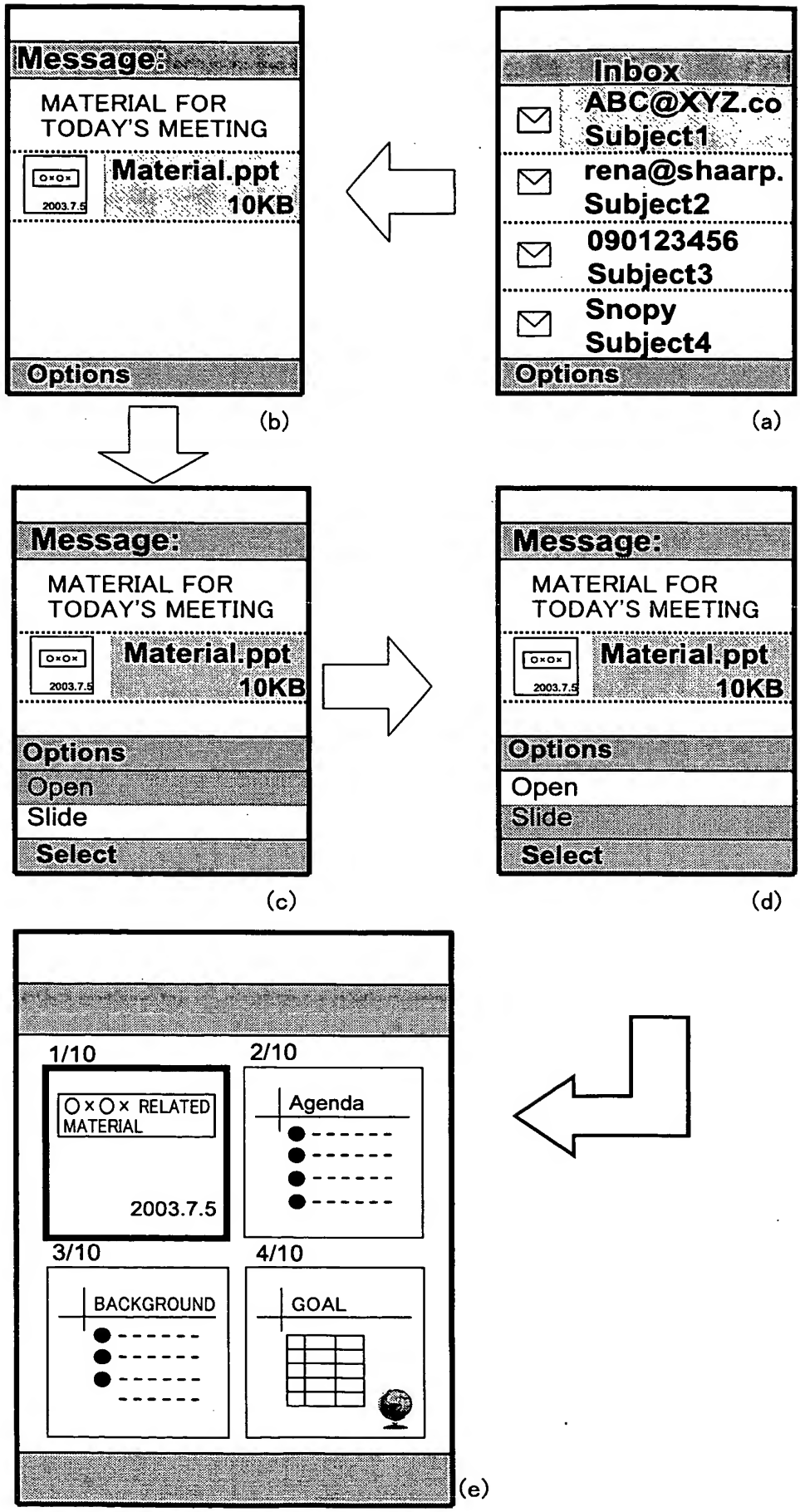

Message:
MATERIAL FOR TODAY'S MEETING
Material.ppt
10KB
2003.7.5
Options
(b)
Inbox
ABC@XYZ.co
Subject1
rena@shaarp.
Subject2
090123456
Subject3
Snopy
Subject4
Options
(a)
Message:
MATERIAL FOR TODAY'S MEETING
Material.ppt
10KB
2003.7.5
Options
Open
Slide
Select
(c)
Message:
MATERIAL FOR TODAY'S MEETING
Material.ppt
10KB
2003.7.5
Options
Open
Slide
Select
(d)
1/10
OxOx RELATED MATERIAL
2003.7.5
2/10
Agenda
3/10
BACKGROUND
4/10
GOAL
(e)

FIG.29

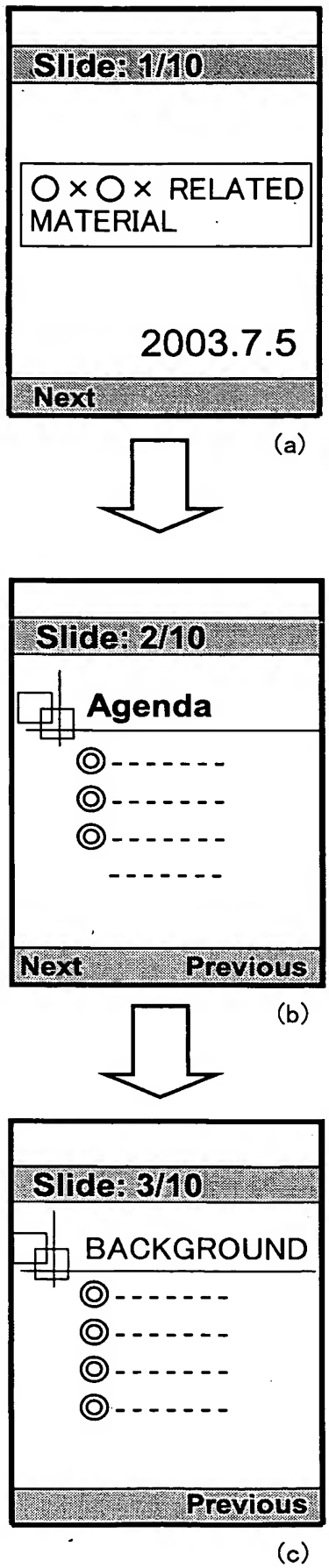

Slide: 1/10
○×○× RELATED MATERIAL
2003.7.5
Next
(a)
Slide: 2/10
Agenda
Next
Previous
(b)
Slide: 3/10
BACKGROUND
Previous
(c)

FIG.30

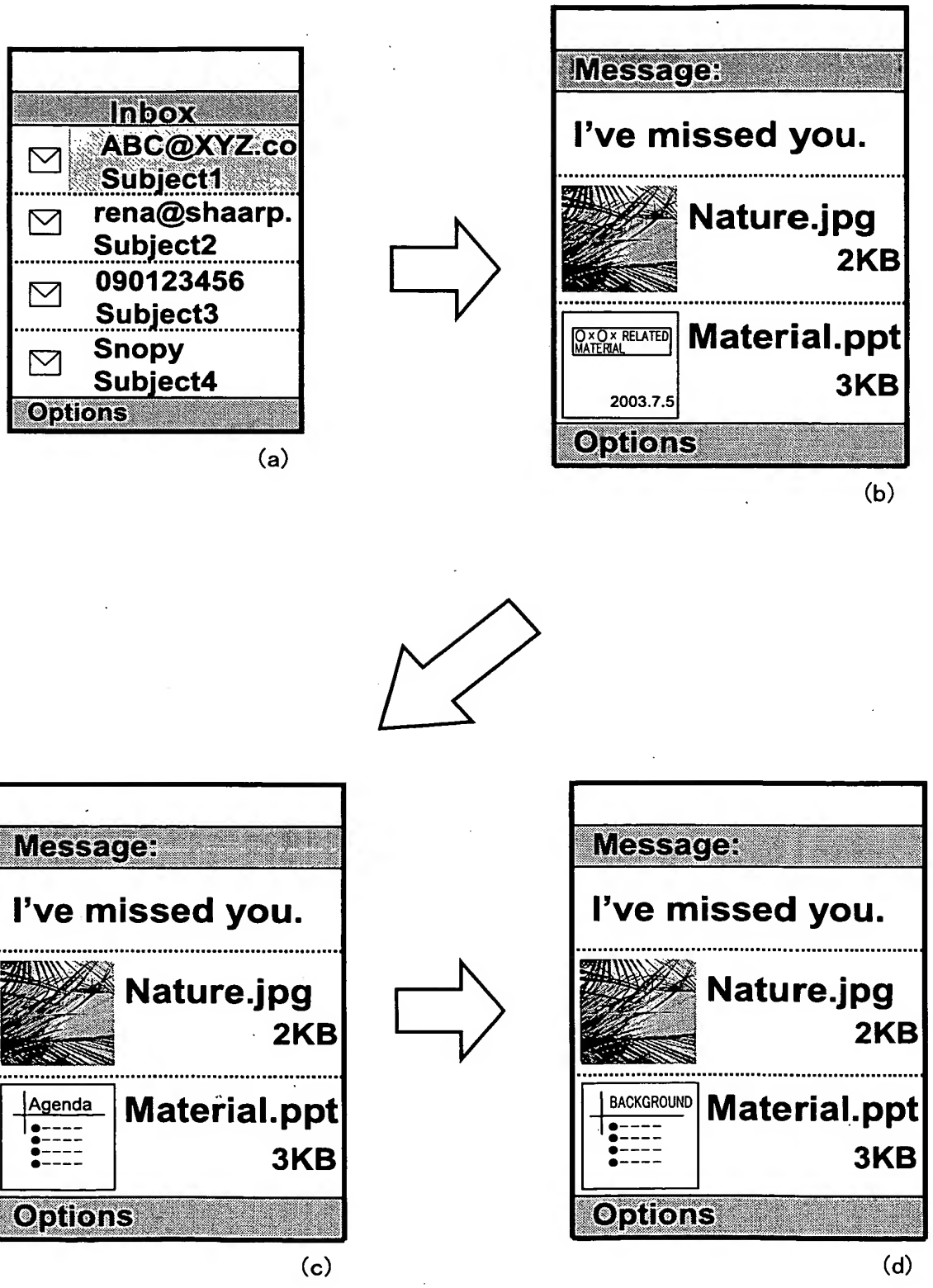

Inbox
ABC@XYZ.co
Subject1
rena@shaarp.
Subject2
090123456
Subject3
Snopy
Subject4
Options
(a)
Message:
I've missed you.
Nature.jpg
2KB
OxOx RELATED MATERIAL
2003.7.5
Material.ppt
3KB
Options
(b)
Message:
I've missed you.
Nature.jpg
2KB
Agenda
Material.ppt
3KB
Options
(c)
Message:
I've missed you.
Nature.jpg
2KB
BACKGROUND
Material.ppt
3KB
Options
(d)

FIG.31

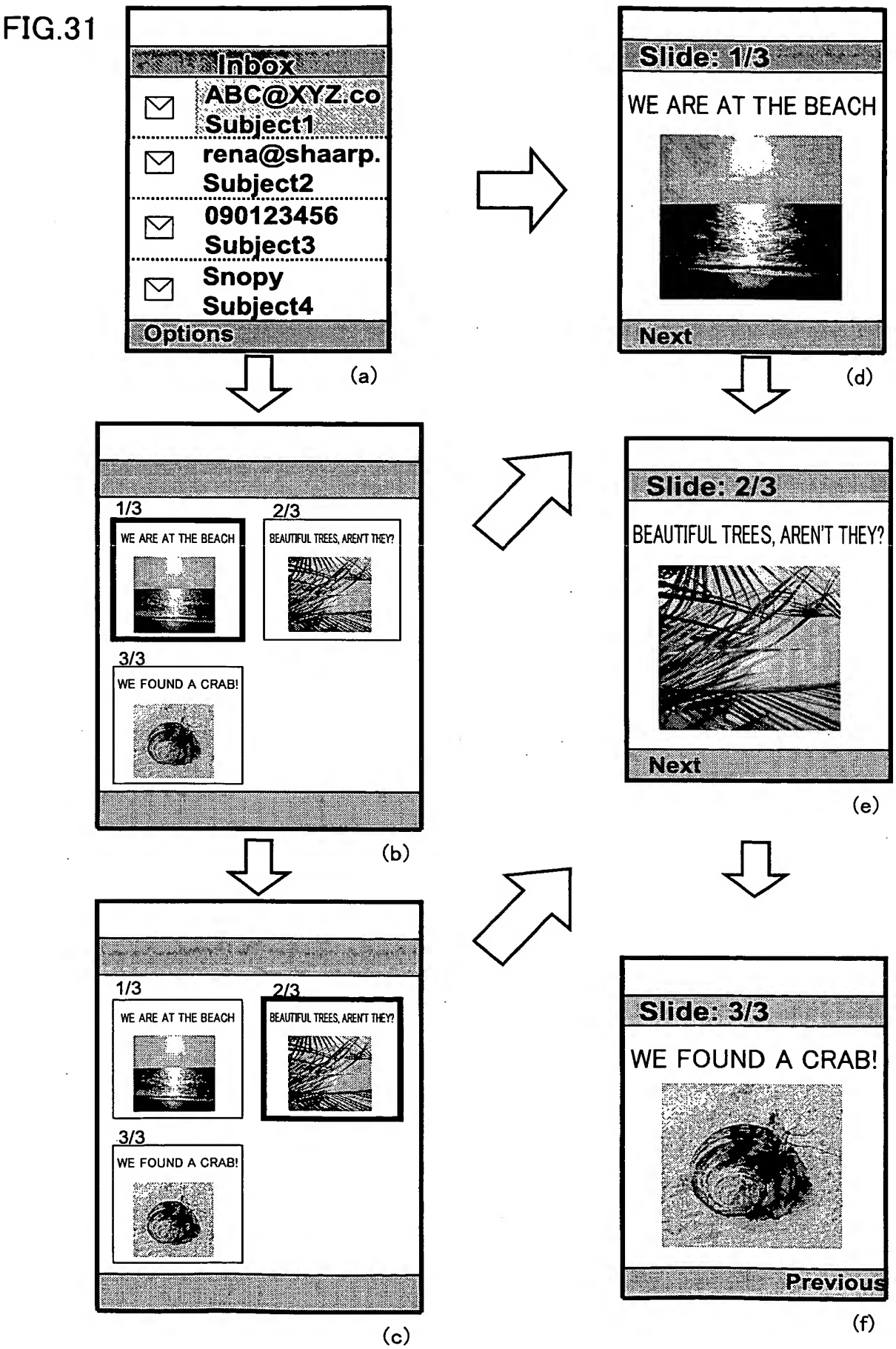
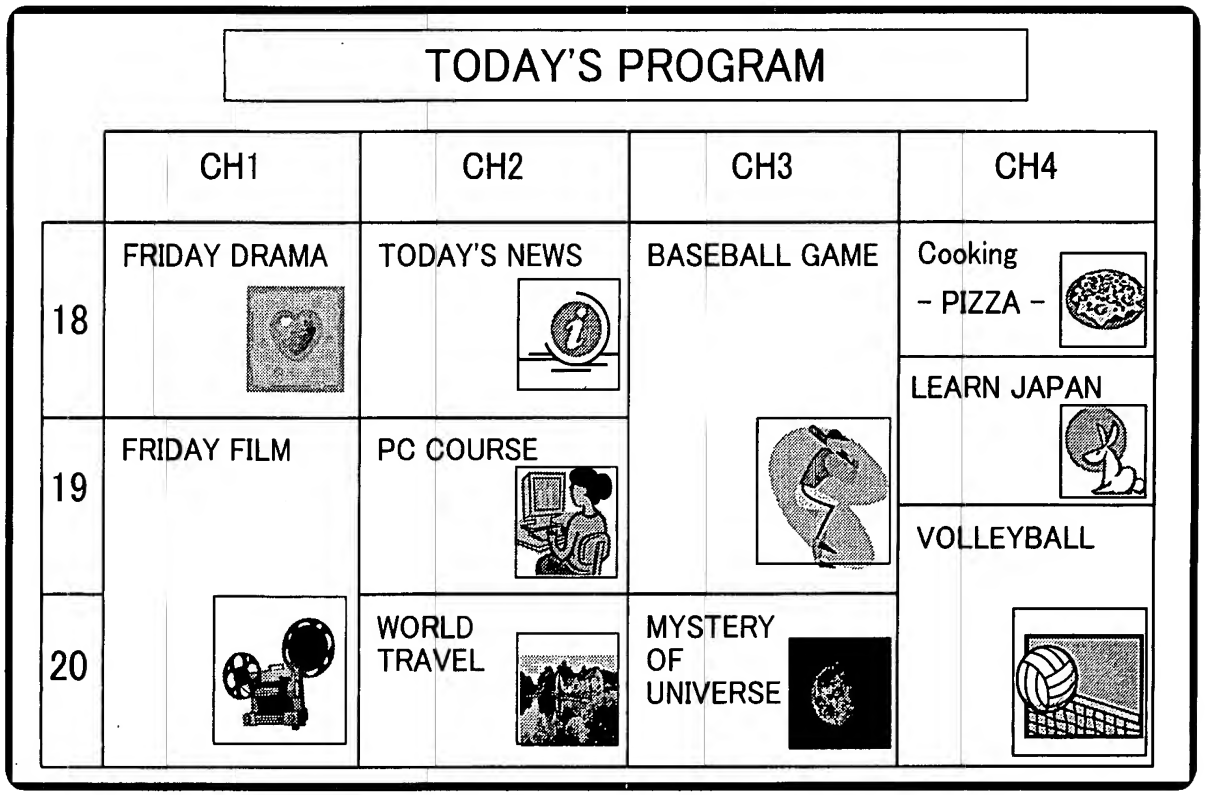

Inbox
ABC@XYZ.co
Subject1
rena@shaarp.
Subject2
090123456
Subject3
Snopy
Subject4
Options
(a)
1/3
WE ARE AT THE BEACH
2/3
BEAUTIFUL TREES, AREN'T THEY?
3/3
WE FOUND A CRAB!
(b)
1/3
WE ARE AT THE BEACH
2/3
BEAUTIFUL TREES, AREN'T THEY?
3/3
WE FOUND A CRAB!
(c)
Slide: 1/3
WE ARE AT THE BEACH
Next
(d)
Slide: 2/3
BEAUTIFUL TREES, AREN'T THEY?
Next
(e)
Slide: 3/3
WE FOUND A CRAB!
Previous
(f)

FIG.32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